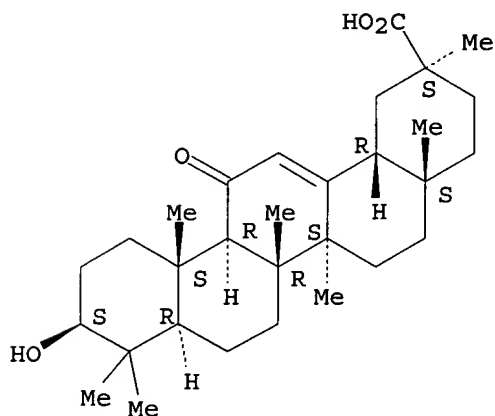


L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 471-53-4 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Olean-12-en-29-oic acid, 3-hydroxy-11-oxo-, (3 β ,20 β)- (9CI) (CA
 INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Olean-12-en-30-oic acid, 3 β -hydroxy-11-oxo- (8CI)
 CN Uralenic acid (7CI)
 OTHER NAMES:
 CN α -Glycyrrhetic acid
 CN 18 β -Glycyrrhetic acid
 CN 18 β -Glycyrrhetinic acid
 CN Arthrodont
 CN Biosone
 CN Enoxolone
 CN Glycyrrhetic acid
 CN Glycyrrhetin
 CN **Glycyrrhetic acid**
 CN GM 1658
 CN NSC 35347
 CN PO 12
 CN STX 352
 CN Subglycyrrhelinic acid
 FS STEREOSEARCH
 DR 8055-71-8, 15301-63-0, 107420-91-7, 202522-39-2, 299198-00-8
 MF C30 H46 O4
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOSIS, BIOTECHNO,
 CA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMLIST, CIN, CSCHM,
 DDFU, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*,
 NAPRALERT, NIOSHTIC, PROMT, PS, RTECS*, SPECINFO, TOXCENTER, USAN,
 USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: EINECS**, NDSL**, TSCA**, WHO
 (**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.

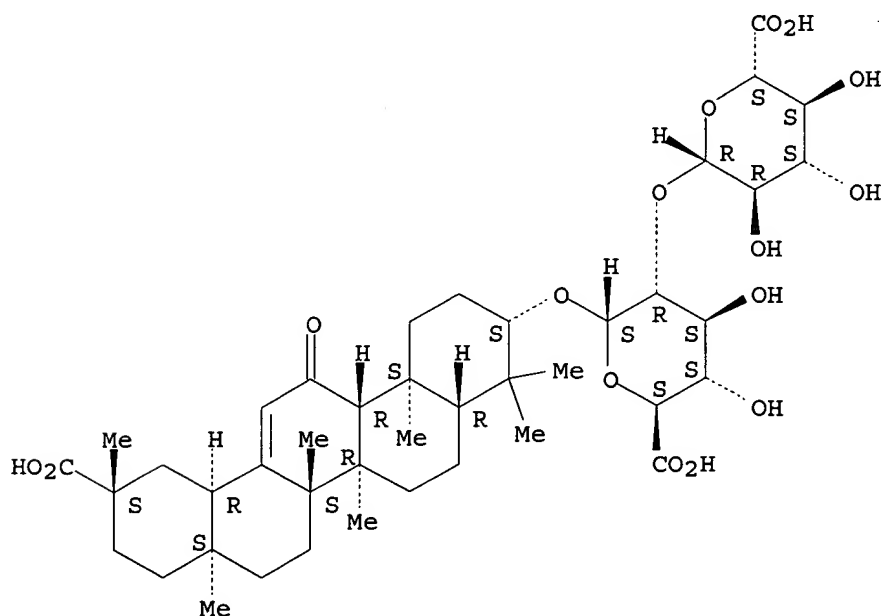


****PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT****

1543 REFERENCES IN FILE CA (1907 TO DATE)
 133 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 1546 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 1405-86-3 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN α -D-Glucopyranosiduronic acid, (3 β ,20 β)-20-carboxy-11-oxo-
 30-norolean-12-en-3-yl 2-O- β -D-glucopyranuronosyl- (9CI) (CA INDEX
 NAME)
 OTHER CA INDEX NAMES:
 CN 30-Noroleanane, α -D-glucopyranosiduronic acid deriv.
 CN **Glycyrrhizic acid (8CI)**
 OTHER NAMES:
 CN β -Glycyrrhizin
 CN 18 β -Glycyrrhizic acid
 CN Glycyron
 CN Glycyrrhetic acid glycoside
 CN Glycyrrhizin
 CN Glycyrrhizinic acid
 CN NSC 167409
 CN NSC 234419
 CN Potenlini
 FS STEREOSEARCH
 DR 18933-02-3, 139014-59-8, 70055-50-4, 79165-07-4, 31261-47-9, 47897-45-0,
 47897-48-3
 MF C42 H62 O16
 CI COM
 LC STN Files: ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOSIS,
 BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMLIST,
 CIN, CSCHEM, DDFU, DETHERM*, DRUGU, EMBASE, HSDB*, IFICDB, IFIPAT,
 IFIUDB, IMSCOSEARCH, IPA, MEDLINE, MRCK*, NAPRALERT, PROMT, PROUSDDR,
 RTECS*, TOXCENTER, USAN, USPAT2, USPATFULL, VETU
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2520 REFERENCES IN FILE CA (1907 TO DATE)
153 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
2526 REFERENCES IN FILE CAPLUS (1907 TO DATE)
4 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L2 ANSWER 42 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:80532 CAPLUS

DOCUMENT NUMBER: 124:219390

TITLE: Inhibitory effects of lantadenes and related
triterpenoids on **Epstein-**
Barr virus activation

AUTHOR(S): Inada, Akira; Nakanishi, Tsutomu; Tokuda, Harukuni;
Nishino, Hoyoku; Iwashima, Akio; Sharma, Om P.

CORPORATE SOURCE: Fac. Pharmaceutical Sci., Setsunan Univ., Osaka,
573-01, Japan

SOURCE: Planta Medica (1995), 61(6), 558-9

CODEN: PLMEAA; ISSN: 0032-0943

PUBLISHER: Thieme

DOCUMENT TYPE: Journal

LANGUAGE: English

AB To search for possible inhibitors of tumor promotion, the inhibitory effects of lantadenes and related **triterpenoids** from *Lantana camara* L. (Verbenaceae) on **Epstein-Barr** virus activation in Raja cells were tested. The substitutions on the carboxylic acid through an ester bond might play an important role in the activity.

L2 ANSWER 46 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:441845 CAPLUS

DOCUMENT NUMBER: 122:281523

TITLE: Inhibitory effects of cucurbitane
triterpenoids on **Epstein-**
Barr virus activation and two-stage
carcinogenesis of skin tumor. II

AUTHOR(S): Konoshima, Takao; Takasaki, Midori; Kozuka, Mutsuo;
Nagao, Tsuneatsu; Okabe, Hikaru; Irino, Nobuto;
Nakasumi, Tetsuo; Tokuda, Harukuni; Nishino, Hoyoku

CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan

SOURCE: Biological & Pharmaceutical Bulletin (1995), 18(2),
284-7

CODEN: BPBLEO; ISSN: 0918-6158

PUBLISHER: Pharmaceutical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB To search for possible anti-tumor-promoters, we carried out a primary
screening of twenty-four 29-nor-cucurbitacin glucosides isolated from the
roots of *Cayaponia tayuya* (Cucurbitaceae) using an in vitro synergistic
assay system. Of these glucosides, cayaponosides B (5), B3 (7), D (8),
D3b (22) and C2 (23) exhibited significant inhibitory effects on
Epstein-Barr virus (EBV) activation induced by the tumor promoter,
12-O-tetradecanoylphorbol-13-acetate (TPA). Furthermore, 5 and 23
exhibited remarkable anti-tumor-promoting effects on mouse skin tumor
promotion in an in vivo two-stage carcinogenesis test.

=> d his

(FILE 'HOME' ENTERED AT 13:08:49 ON 19 APR 2006)

FILE 'CAPLUS, MEDLINE' ENTERED AT 13:09:00 ON 19 APR 2006

| | |
|----|--|
| L1 | 6 S GLYCYRRHIZIN (P) EPSTEIN BARR VIR? |
| L2 | 6 S GLYCYRRHIZIN (P) EPSTEIN BARR |
| L3 | 4 S GLYCYRRHIZIC ACID (P) EPSTEIN BARR |
| L4 | 5 S GLYCYRRHETINIC ACID (P) EPSTEIN BARR |
| L5 | 12 S TERPENOID? (P) EPSTEIN BARR |
| L6 | 100 S ?TERPENOID? (P) EPSTEIN BARR |
| L7 | 100 S ?TERPENOID? (P) EPSTEIN BARR VIRUS |
| L8 | 3 S L7 AND ADMINIST? |

L1 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:863496 CAPLUS

DOCUMENT NUMBER: 135:366719

TITLE: Composition for and method of treatment of Kaposi's sarcoma and Kaposi's sarcoma-associated herpesvirus infection using triterpenoids

INVENTOR(S): Flore, Ornella

PATENT ASSIGNEE(S): USA

SOURCE: U.S., 16 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|-------------|
| US 6323183 | B1 | 20011127 | US 1999-324473 | 19990602 |
| US 2002091158 | A1 | 20020711 | US 2001-976838 | 20011015 |
| PRIORITY APPLN. INFO.: | | | US 1999-324473 | A3 19990602 |

AB Methods and compns. for treating Kaposi's sarcoma and **Epstein Barr virus** using a a therapeutic derivative of a triterpenoid acid and derivs. thereof are disclosed. The present invention relates to the use of a triterpenoid preferably a glycyrrhizic acid (**glycyrrhizin**) to inhibit the transcription of viral latent genes and the consequential viral latent cycle at doses that do not affect the uninfected cells. Using glycyrrhizic acid and derivs., the Kaposi's sarcoma-associated herpesvirus (KSHV) infected cells are completely killed six days after treatment.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:289081 CAPLUS
DOCUMENT NUMBER: 139:301037
TITLE: Anti-carcinogenic activities of natural sweeteners
AUTHOR(S): Konoshima, Takao; Takasaki, Midori
CORPORATE SOURCE: Lab. Pharmaceutical Sci. Natural Resources, Kyoto
Pharmaceutical Univ., Tokyo, 607-8414, Japan
SOURCE: Foods & Food Ingredients Journal of Japan (2003),
208(3), 184-191
CODEN: FFIJER; ISSN: 0919-9772
PUBLISHER: FFI Janaru
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A review. Many kinds of antitumor agents and their related compds. have been isolated from natural resources, and the medicinal sciences have made rapid progress in the treatment of carcinogenesis, however, cancer currently remains a tragic disease and is one of the major causes of death worldwide. Furthermore, perfectly effective antitumor agents free from side effects have not been found yet, and these side effects of antitumor agents are serious problems in the treatment of cancer. Therefore, the advancement of chemoprevention is important, as well as the development of cancer treatment. To search for possible cancer-chemopreventive agents from natural sources, several natural sweeteners were screened by the in vitro assay indicated by the inhibitory effects of **Epstein-Barr virus** early antigen (EBV-EA) induction. Of active compds. that showed the remarkable inhibitory effects on the EBV-EA induction, stevioside, from the leaves of *Stevia rebaudiana*, and mogroside V, from the fruits of *Momordica grosvenori*, exhibited significant inhibitory effects on the two-stage mouse skin carcinogenesis in vivo induced by 7,12-dimethylbenz[a]anthracene (DMBA) and 12-O-tetradecanoylphorbol-13-acetate (TPA). The inhibitory effects of these sweeteners are stronger than that of **glycyrrhizin**, which had been known as an anti-tumor-promoter in chemical carcinogenesis. Furthermore, stevioside also inhibited mouse skin carcinogenesis initiated by peroxynitrite (ONOO). These results suggested that stevioside and mogroside V, which have been used as an alternative sweetener to sucrose might be also valuable as chemopreventive agents for chemical carcinogenesis.

L1 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:640085 CAPLUS
DOCUMENT NUMBER: 137:309776
TITLE: Cancer-chemopreventive effects of natural sweeteners and related compounds
AUTHOR(S): Konoshima, Takao; Takasaki, Midori
CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607-8414, Japan
SOURCE: Pure and Applied Chemistry (2002), 74(7), 1309-1316
CODEN: PACHAS; ISSN: 0033-4545
PUBLISHER: International Union of Pure and Applied Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English

AB To search for possible cancer-chemopreventive agents from natural resources, several natural sweeteners were screened by the in vitro assay indicated by the inhibitory effects of **Epstein-Barr virus** early antigen (EBV-EA) induction. Of active compds. that showed the remarkable inhibitory effects on the EBV-EA induction, stevioside, from the leaves of *Stevia rebaudiana*, and mogroside V, from the fruits of *Momordica grosvenori*, exhibited significant inhibitory effects on the two-stage mouse skin carcinogenesis in vivo induced by 7,12-dimethylbenz[a]anthracene (DMBA) and 12-O-tetradecanoylphorbol-13-acetate (TPA). The inhibitory effect of stevioside is stronger than that of **glycyrrhizin**, which had been known as an antitumor-promoter in chemical carcinogenesis. Furthermore, stevioside also inhibited mouse

skin carcinogenesis initiated by peroxyxynitrite. These results suggest that stevioside and mogroside V might be valuable as chemopreventive agents for chemical carcinogenesis.

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:863496 CAPLUS

DOCUMENT NUMBER: 135:366719

TITLE: Composition for and method of treatment of Kaposi's sarcoma and Kaposi's sarcoma-associated herpesvirus infection using triterpenoids

INVENTOR(S): Flore, Ornella

PATENT ASSIGNEE(S): USA

SOURCE: U.S., 16 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|-------------|
| US 6323183 | B1 | 20011127 | US 1999-324473 | 19990602 |
| US 2002091158 | A1 | 20020711 | US 2001-976838 | 20011015 |
| PRIORITY APPLN. INFO.: | | | US 1999-324473 | A3 19990602 |

AB Methods and compns. for treating Kaposi's sarcoma and **Epstein**

Barr virus using a a therapeutic derivative of a triterpenoid acid and derivs. thereof are disclosed. The present invention relates to the use of a triterpenoid preferably a glycyrrhizic acid (**glycyrrhizin**) to inhibit the transcription of viral latent genes and the consequential viral latent cycle at doses that do not affect the uninfected cells. Using glycyrrhizic acid and derivs., the Kaposi's sarcoma-associated herpesvirus (KSHV) infected cells are completely killed six days after treatment.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1983:401608 CAPLUS

DOCUMENT NUMBER: 99:1608

TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in Epstein-Barr virus early antigen in Raji cells

AUTHOR(S): Okamoto, Hitoshi; Yoshida, Daisuke; Mizusaki, Shigenobu

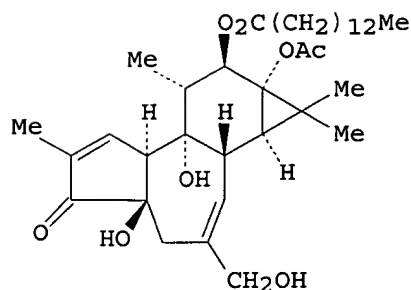
CORPORATE SOURCE: Cent. Res. Inst., Japan Tob. and Salt Public Corp., Yokohama, 227, Japan

SOURCE: Cancer Letters (Shannon, Ireland) (1983), 19(1), 47-53
CODEN: CALEDQ; ISSN: 0304-3835

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



I

AB Retinol [68-26-8], 5 flavonoids, 3 steroids, and 7 sweetening agents were studied for their effects on TPA (I) [16561-29-8]-induced early antigen (EA) of **Epstein-Barr virus** (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol inhibited EA induction. Among flavonoids, quercetin [117-39-5] resulted in effective inhibition of EA induction by TPA and α -naphthoflavone [604-59-1] showed a weakly inhibitory effect. None of the other flavonoids such as rutin [153-18-4], catechin [154-23-4] and β -naphthoflavone [6051-87-2] affected the induction of EBV-EA by TPA. β -Estradiol [50-28-2] obviously inhibited EBV-EA induction by TPA, but hydrocortisone [50-23-7] did not show any inhibitory effect. Glycyrrhetic acid, steviol, phyllostulcin and perrillartine also strongly inhibited EBV-EA induction. **Glycyrrhizin** [1405-86-3] and stevioside [57817-89-7], glycosides of glycyrrhetic acid [471-53-4] and steviol [471-80-7], did not inhibit the induction of EBV-EA by TPA. Some of these inhibitors may be effective in inhibiting the in vivo tumor promotion by TPA.

L1 ANSWER 5 OF 6 MEDLINE on STN
 ACCESSION NUMBER: 93381131 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 8370836
 TITLE: Repeat MRI in acute rhabdomyolysis: correlation with clinicopathological findings.
 AUTHOR: Shintani S; Shiigai T
 CORPORATE SOURCE: Department of Neurology, Toride Kyodo General Hospital, Ibaraki, Japan.
 SOURCE: Journal of computer assisted tomography, (1993 Sep-Oct) Vol. 17, No. 5, pp. 786-91.
 Journal code: 7703942. ISSN: 0363-8715.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: (CASE REPORTS)
 Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199310
 ENTRY DATE: Entered STN: 19931029
 Last Updated on STN: 19931029
 Entered Medline: 19931012

AB OBJECTIVE: Four cases of acute rhabdomyolysis are presented and the correlation between clinicopathological and MR findings is discussed. MATERIALS AND METHODS: The cases include carnitine palmitoyltransferase I deficiency presenting as compartment syndrome, acute polymyositis, acute myositis associated with **Epstein-Barr virus** infection, and **glycyrrhizin**- and diuretic-induced hypokalemic myopathy. RESULTS: The T2-weighted MR images revealed high intensity lesions in the affected muscle groups. The lesions seen on MR correlated precisely with the symptoms and neurological deficits of the patients. Repeat MR studies showed that the high intensity lesions seen on T2-weighted MR images resolved in parallel with the clinical course. CONCLUSION: This reversibility of the MR findings suggests that the high intensity lesions do not reflect permanent myopathic changes, but probably

represent transient edema in the acute phase of rhabdomyolysis.

L1 ANSWER 6 OF 6 MEDLINE on STN
ACCESSION NUMBER: 83206473 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6850568
TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced
induction in Epstein-Barr virus early antigen in Raji
cells.
AUTHOR: Okamoto H; Yoshida D; Mizusaki S
SOURCE: Cancer letters, (1983 May) Vol. 19, No. 1, pp. 47-53.
Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198307
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19990129
Entered Medline: 19830729
AB Retinol, 5 flavonoids, 3 steroids and 7 sweetening agents were studied for
their effects on 12-O-tetradecanoylphorbol-13-acetate (TPA)-induced early
antigen (EA) of **Epstein-Barr virus** (EBV) in
Raji cells. Concomitant treatment of Raji cells with TPA and retinol
showed inhibition of EA induction. Among flavonoids, quercetin resulted
in effective inhibition of EA induction by TPA and alpha-naphthoflavone
showed the weakly inhibitory effect. None of the other flavonoids such as
rutin, catechin and beta-naphthoflavone affected the induction of EBV-EA
by TPA. beta-Estradiol obviously inhibited EBV-EA induction by TPA, but
hydrocortisone did not show any inhibitory effect on it. Glycyrrhetic
acid, steviol, phyllodulcin and perrillartine also showed the remarkable
inhibition of EBV-EA induction. On the other hand, **glycyrrhizin**
and stevioside, glycosides of glycyrrhetic acid and steviol, did not
inhibit the induction of EBV-EA by TPA. Some of the inhibitors reported
here may be effective on the inhibition of the in vivo tumor promotion by
TPA.

L3 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:499243 CAPLUS

DOCUMENT NUMBER: 139:374307

TITLE: Mechanism of action of **glycyrrhizic acid** in inhibition of **Epstein-Barr** virus replication in vitro

AUTHOR(S): Lin, Jung-Chung

CORPORATE SOURCE: College of Medicine, Department of Microbiology, Tzu Chi University, Hualien, 970, Taiwan

SOURCE: Antiviral Research (2003), 59(1), 41-47

CODEN: ARSRDR; ISSN: 0166-3542

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors report here that glycyrrhizic acid (GL), a component of licorice root (*Glycyrrhiza radix*), is active against EBV replication in superinfected Raji cells in a dose-dependent fashion. The IC50 values for viral inhibition and cell growth were 0.04 and 4.8 mM, resp. The selectivity index (ratio of IC50 for cell growth to IC50 for viral DNA synthesis) was 120. Time of addition expts. suggested that GL interferes with an early step of the EBV replication cycle (possibly penetration). GL had no effect on viral adsorption nor did it inactivate EBV particles. Thus, GL represents a new class of anti-EBV compds. with a mode of action different from that of the nucleoside analogs that inhibit viral DNA polymerase.

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:863496 CAPLUS

DOCUMENT NUMBER: 135:366719

TITLE: Composition for and method of treatment of Kaposi's sarcoma and Kaposi's sarcoma-associated herpesvirus infection using triterpenoids

INVENTOR(S): Flore, Ornella

PATENT ASSIGNEE(S): USA

SOURCE: U.S., 16 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|-------------|
| ----- | ---- | ----- | ----- | ----- |
| US 6323183 | B1 | 20011127 | US 1999-324473 | 19990602 |
| US 2002091158 | A1 | 20020711 | US 2001-976838 | 20011015 |
| PRIORITY APPLN. INFO.: | | | US 1999-324473 | A3 19990602 |

AB Methods and compns. for treating Kaposi's sarcoma and **Epstein Barr** virus using a a therapeutic derivative of a triterpenoid acid and derivs. thereof are disclosed. The present invention relates to the use of a triterpenoid preferably a **glycyrrhizic acid** (glycyrrhizin) to inhibit the transcription of viral latent genes and the consequential viral latent cycle at doses that do not affect the uninfected cells. Using **glycyrrhizic acid** and derivs., the Kaposi's sarcoma-associated herpesvirus (KSHV) infected cells are completely killed six days after treatment.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:763541 CAPLUS

DOCUMENT NUMBER: 130:172862

TITLE: Epstein-Barr virus DNA polymerase inhibitors from Chinese herbs: use of preliminary screening, physicochemical properties and taxonomy for new lead compounds generation

AUTHOR(S): Lien, Eric J.; Bui, Huynh-Hoa; Ren, Shijun; Liu, Karin C. S. Chen; Lin, Mei-Tsu; Chiou, Juo-Farn

CORPORATE SOURCE: Department of Pharmaceutical Sciences, School of Pharmacy, University of Southern California, Los Angeles, CA, 90033, USA

SOURCE: Chinese Pharmaceutical Journal (Taipei) (1998), 50(4), 233-247

CODEN: CPHJEP; ISSN: 1016-1015

PUBLISHER: Pharmaceutical Society of Republic of China

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A paradigm of combining preliminary screening data, SAR, functional group and taxonomical analyses has been proposed for new lead compds.. generation. Based on the screening data of 38 natural products, a quaternary ammonium derivative (coptisine chloride), a sesquiterpene with an α,β -unsatd. lactone function and an isoflavonoid (daidzein) have been found to be most active. Based on the analyses of overall structures, physicochem. properties and taxonomical relationships, 47 related compds. and six families of plants are suggested for further investigation. Due to the inherent biodiversity, nature may still be the best source for new drug discovery.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1986:454210 CAPLUS

DOCUMENT NUMBER: 105:54210

TITLE: Search for possible anti-tumor promoters by inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced Epstein-Barr virus activation; ursolic acid and oleanolic acid from an anti-inflammatory Chinese medical plant, *Glechoma hederaceae* L
AUTHOR(S): Ohigashi, Hajime; Takamura, Hitoshi; Koshimizu, Koichi; Tokuda, Harukuni; Ito, Yohei
CORPORATE SOURCE: Fac. Agric., Kyoto Univ., Kyoto, 606, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (1986), 30(2), 143-51
CODEN: CALEDQ; ISSN: 0304-3835

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two triterpene carboxylic acids, ursolic acid (UA) [77-52-1] and oleanolic acid (OA) [508-02-1], were isolated from an antiinflammatory Chinese medicinal plant, *G. hederaceae* as inhibitors of 12-O-tetradecanoylphorbol 13-acetate (TPA) [16561-29-8]-induced Epstein-Barr virus (EBV) activation in Raji cells. Both acids inhibited activation of the virus at a 1000-fold molar ratio to TPA and also teleocidin B-4 [11032-05-6]. The dose-responses of the acids were very similar to those of the antitumor promoters, retinoic acid and glycyrrhetic acid (GA). However, a characteristic property that UA and OA possess, is higher cell viability. Furthermore, enhancement of the inhibitory activity was found in 3-keto derivs. of UA and OA, whereas either loss of the O functionality at C-3 position of UA or oxidation at C-3 of GA led to reduction of the activity. Binding assays suggest that the inhibitory activity appears to be related to the binding of TPA to the receptor in the cells.

L4 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1983:401608 CAPLUS

DOCUMENT NUMBER: 99:1608

TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in Epstein-Barr virus early antigen in Raji cells

AUTHOR(S): Okamoto, Hitoshi; Yoshida, Daisuke; Mizusaki, Shigenobu

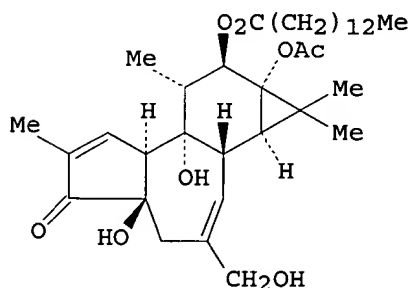
CORPORATE SOURCE: Cent. Res. Inst., Japan Tob. and Salt Public Corp., Yokohama, 227, Japan

SOURCE: Cancer Letters (Shannon, Ireland) (1983), 19(1), 47-53
CODEN: CALEDQ; ISSN: 0304-3835

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



AB Retinol [68-26-8], 5 flavonoids, 3 steroids, and 7 sweetening agents were

studied for their effects on TPA (I) [16561-29-8]-induced early antigen (EA) of **Epstein-Barr** virus (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol inhibited EA induction. Among flavonoids, quercetin [117-39-5] resulted in effective inhibition of EA induction by TPA and α -naphthoflavone [604-59-1] showed a weakly inhibitory effect. None of the other flavonoids such as rutin [153-18-4], catechin [154-23-4] and β -naphthoflavone [6051-87-2] affected the induction of EBV-EA by TPA. β -Estradiol [50-28-2] obviously inhibited EBV-EA induction by TPA, but hydrocortisone [50-23-7] did not show any inhibitory effect. **Glycyrrhetic acid**, steviol, phyllostachyin and perrillartine also strongly inhibited EBV-EA induction. Glycyrrhizin [1405-86-3] and stevioside [57817-89-7], glycosides of **glycyrrhetic acid** [471-53-4] and steviol [471-80-7], did not inhibit the induction of EBV-EA by TPA. Some of these inhibitors may be effective in inhibiting the in vivo tumor promotion by TPA.

L4 ANSWER 3 OF 5 MEDLINE on STN
 ACCESSION NUMBER: 86161439 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 3006912
 TITLE: Search for possible antitumor promoters by inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced Epstein-Barr virus activation; ursolic acid and oleanolic acid from an anti-inflammatory Chinese medicinal plant, *Glechoma hederaceae* L.
 AUTHOR: Ohigashi H; Takamura H; Koshimizu K; Tokuda H; Ito Y
 SOURCE: Cancer letters, (1986 Feb) Vol. 30, No. 2, pp. 143-51. Journal code: 7600053. ISSN: 0304-3835.
 PUB. COUNTRY: Netherlands
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 198605
 ENTRY DATE: Entered STN: 19900321
 Last Updated on STN: 19900321
 Entered Medline: 19860508

AB From an anti-inflammatory Chinese medicinal plant, *Glechoma hederaceae* L., two triterpene carboxylic acids, ursolic acid (UA) and oleanolic acid (OA) have been isolated as inhibitors of 12-O-tetradecanoylphorbol-13-acetate (TPA) induced **Epstein-Barr** virus (EBV) activation in Raji cells. Both acids significantly inhibited the activation at a 1000-fold molar ratio to TPA, and also teleocidin B-4. The dose responses of the acids were very similar to those of the antitumor promoters, retinoic acid (RA) and **glycyrrhetic acid** (GA). However, a characteristic property that UA and OA possess, far higher cell viability to the Raji cells than RA to the Raji cells, has been pointed out. Furthermore, enhancement of the inhibitory activity was found in 3-keto derivatives of UA and OA, while either loss of oxygen functionality at C-3 position of UA or oxidation at C-3 of GA led to reduction of the activity. Binding assay suggested that the inhibitory activity should be exhibited by some event caused after binding of TPA to the receptor in the cells.

L4 ANSWER 4 OF 5 MEDLINE on STN
 ACCESSION NUMBER: 84055021 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 6315213
 TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced ornithine decarboxylase activity in mouse epidermis by sweetening agents and related compounds.
 AUTHOR: Okamoto H; Yoshida D; Saito Y; Mizusaki S
 SOURCE: Cancer letters, (1983 Nov) Vol. 21, No. 1, pp. 29-35. Journal code: 7600053. ISSN: 0304-3835.
 PUB. COUNTRY: Netherlands
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198401
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19900319
Entered Medline: 19840107

AB The effects of naturally occurring sweetening agents, which inhibited the induction of **Epstein-Barr** virus-associated early antigen (EBV-EA) induced by 12-O-tetradecanoylphorbol-13-acetate (TPA), and related compounds on the induction of ornithine decarboxylase (ODC) by TPA is examined. Application of **glycyrrhetic acid** or steviol to mouse skin 1 h before TPA treatment showed a remarkable decrease in TPA-induced ODC activity. Post-treatment with **glycyrrhetic acid** or steviol 1 h after application of TPA also resulted in a considerable depression in the induction of ODC activity. Neither **glycyrrhetic acid** nor steviol alone induced epidermal ODC activity. These results suggest that **glycyrrhetic acid** and steviol interfere with the process of induction of epidermal ODC by TPA treatment of mouse skin. *cis*-Abienol, frullanolide and norambreinolide, which have a partially similar structure in the moiety with **glycyrrhetic acid** or steviol, were tested. *cis*-Abienol and frullanolide showed an inhibitory effect when applied 1 h before TPA treatment, but norambreinolide was not effective. A relationship between suppression of ODC activity and inhibition of EBV-EA induction is discussed.

L4 ANSWER 5 OF 5 MEDLINE on STN
ACCESSION NUMBER: 83206473 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6850568
TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in Epstein-Barr virus early antigen in Raji cells.
AUTHOR: Okamoto H; Yoshida D; Mizusaki S
SOURCE: Cancer letters, (1983 May) Vol. 19, No. 1, pp. 47-53.
Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198307
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19990129
Entered Medline: 19830729

AB Retinol, 5 flavonoids, 3 steroids and 7 sweetening agents were studied for their effects on 12-O-tetradecanoylphorbol-13-acetate (TPA)-induced early antigen (EA) of **Epstein-Barr** virus (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol showed inhibition of EA induction. Among flavonoids, quercetin resulted in effective inhibition of EA induction by TPA and alpha-naphthoflavone showed the weakly inhibitory effect. None of the other flavonoids such as rutin, catechin and beta-naphthoflavone affected the induction of EBV-EA by TPA. beta-Estradiol obviously inhibited EBV-EA induction by TPA, but hydrocortisone did not show any inhibitory effect on it. **Glycyrrhetic acid**, steviol, phyllostachyin and perrillartine also showed the remarkable inhibition of EBV-EA induction. On the other hand, glycyrrhizin and stevioside, glycosides of **glycyrrhetic acid** and steviol, did not inhibit the induction of EBV-EA by TPA. Some of the inhibitors reported here may be effective on the inhibition of the in vivo tumor promotion by TPA.

L8 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:388776 CAPLUS

DOCUMENT NUMBER: 143:321849

TITLE: Antimicrobial activity of the medicinal mushroom
Ganoderma

AUTHOR(S): Gao, Yihuai; Tang, Wenbo; Gao, He; Chan, Eli; Lan,
Jin; Li, Xiaotian; Zhou, Shufeng

CORPORATE SOURCE: Institute of Food, Nutrition and Human Health, Massey
University, Auckland, N. Z.

SOURCE: Food Reviews International (2005), 21(2), 211-229

CODEN: FRINEL; ISSN: 8755-9129

PUBLISHER: Taylor & Francis, Inc.

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review. Over the past century, a number of synthetic antimicrobial agents have been discovered and developed, but drug resistance and toxicity are still the major hindrances to gaining successful therapeutic outcomes in many instances. Herbal medicines may represent a safe and useful supplement to existing chemotherapeutic therapies for management of infectious diseases. Ganoderma has traditionally been used to treat chronic infectious diseases, such as chronic hepatitis and bronchitis. in Asia, where it is **administered** alone or more often in combination with chemotherapeutic agents. Preclin. (in vitro and in vivo animal) studies indicate that Ganoderma exhibits a broad spectrum of antibacterial and antiviral activities, whereas data in human beings are scanty. Polysaccharides or **triterpenoids** from Ganoderma showed activities against herpes simple virus. Hepatitis B virus, HIV, and **Epstein-Barr virus** in vitro or in animal models. Ganoderma species also contain antibacterial constituents inhibiting Gram-pos. and/or Gram-neg. bacteria in vitro. However, it is difficult to extrapolate these findings to humans, as most of these preclin. studies were conducted under optimized conditions with the use of high doses of Ganoderma components. A double-blind, randomized, placebo-controlled clin. study indicated that treatment of hepatitis B patients with G. lucidum polysaccharides at 5400 mg/day for 12 wk resulted in significantly decreased serum HBV DNA and hepatitis B e antigen (HbeAg) levels. The mechanisms for the antimicrobial and antiviral activities of Ganoderma are largely undefined. Currently available data do not support tire use of Ganoderma as an antibiotic, but it may play an adjunct role for the management of bacterial and viral infection. Further studies are needed in humans.

REFERENCE COUNT: 113 THERE ARE 113 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE
FORMAT

L8 ANSWER 2 OF 3 MEDLINE on STN

ACCESSION NUMBER: 2005017579 MEDLINE

DOCUMENT NUMBER: PubMed ID: 15643564

TITLE: Potential anti-tumor promoting activity of lupane-type
triterpenoids from the stem bark of Glochidion zeylanicum
and Phyllanthus flexuosus.

AUTHOR: Tanaka Reiko; Kinouchi Yoshitaka; Wada Shun-ichi; Tokuda
Harukuni

CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of
Pharmaceutical Sciences, Osaka, Japan..
tanakar@gly.oups.ac.jp

SOURCE: Planta medica, (2004 Dec) Vol. 70, No. 12, pp. 1234-6.

Journal code: 0066751. ISSN: 0032-0943.

PUB. COUNTRY: Germany: Germany, Federal Republic of

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 200503

ENTRY DATE: Entered STN: 20050112
Last Updated on STN: 20050331
Entered Medline: 20050330

AB Four known lupane-type **triterpenoids**, glochidonol (1), glochidiol (2), lup-20(29)-ene-1beta,3beta-diol (3) and glochidone (3) were isolated from the stem bark of *Glochidion zeylanicum*. Previously, lupeol (5), lup-20(29)-ene-3beta,24-diol (6) and betulin (7) were isolated from the stem bark of *Phyllanthus flexuosus*. This study reports the assays of these lupane-type **triterpenoids**: all isolates 1-7 and synthetic analogues, glochidonyl acetate (1a), lup-20(29)-ene-1,3-dione (1b) and lup-20(29)-ene 3beta,24-diacetate (6a) were tested for their inhibitory effects on **Epstein-Barr virus** early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol 13-acetate (TPA). Among them, the effects of compounds 2 (IC₅₀ = 290 mol ratio/32 pmol TPA) and 3 (IC₅₀ = 300) were stronger than the others. In addition, compound 2 exhibited a strong inhibitory effect on mouse skin tumor promotion in an in vivo mouse two-stage carcinogenesis test.

L8 ANSWER 3 OF 3 MEDLINE on STN

ACCESSION NUMBER: 2004528924 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15503357
TITLE: A new seco-abietane-type diterpene from the stem bark of *Picea glehnii*.
AUTHOR: Tanaka Reiko; Wada Shun-ichi; Kinouchi Yoshitaka; Tokuda Harukuni; Matsunaga Shunyo
SOURCE: *Planta medica*, (2004 Sep) Vol. 70, No. 9, pp. 877-80.
Journal code: 0066751. ISSN: 0032-0943.
PUB. COUNTRY: Germany; Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200412
ENTRY DATE: Entered STN: 20041026
Last Updated on STN: 20041220
Entered Medline: 20041210

AB A new seco-abietane-type **diterpenoid**, 13S-hydroxy-9-oxo-9,10-seco-abiet-8(14)-en-18,10alpha-olide (1) along with a known lignan compound, pinoresinol (2) was isolated from the stem bark of *Picea glehnii* (Fr. Schm.) Masters. Spectroscopic methods and chemical conversions were used to establish the structure of 1. In order to assess their cancer chemopreventive potential, the inhibition of **Epstein-Barr virus** early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol 13-acetate (TPA) was examined for compound 1, its synthetic analogue, 9,10-seco-8S,13S-epoxy-abiet-8(14)-en-18,10alpha-olide (1a) and 2. The inhibitory effect of 1a on EBV-EA induction was strong (0, 20.7, 67.1 and 89.2 % inhibition at 1000, 500, 100 and 10 mol ratio/TPA). The IC₅₀ of 1a was 226 mol ratio/32 pmol/TPA.

L7 ANSWER 96 OF 100 MEDLINE on STN

ACCESSION NUMBER: 95004242 MEDLINE

DOCUMENT NUMBER: PubMed ID: 7920430

TITLE: Inhibitory effects of cucurbitane **triterpenoids**
on **Epstein-Barr virus**

activation and two-stage carcinogenesis of skin tumors.

AUTHOR: Konoshima T; Takasaki M; Tatsumoto T; Kozuka M; Kasai R;
Tanaka O; Nie R L; Tokuda H; Nishino H; Iwashima A

CORPORATE SOURCE: Kyoto Pharmaceutical University, Japan.

SOURCE: Biological & pharmaceutical bulletin, (1994 May) Vol. 17,
No. 5, pp. 668-71.

Journal code: 9311984. ISSN: 0918-6158.

PUB. COUNTRY: Japan

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199410

ENTRY DATE: Entered STN: 19941222

Last Updated on STN: 19941222

Entered Medline: 19941025

AB To search for possible anti-tumor-promoters, we carried out a primary screening of 21 cucurbitane **triterpenoids** using an in vitro assay system. Of these **triterpenoids**, scandenoside R6 (6), 23,24-dihydrocucurbitacin F (14), 25-acetyl-23,24-dihydrocucurbitacin F (15), 2-O-beta-D-glucopyranosyl-23,24-dihydrocucurbitacin F (17) and cucurbitacin F (18) exhibited significant inhibitory effects on **Epstein-Barr virus** (EBV) activation induced by the tumor promoter, 12-O-tetradecanoyl-phorbol-13-acetate (TPA). Further, compounds 14 and 17 exhibited remarkable anti-tumor-promotion effects on mouse skin tumor promotion in an in vivo two-stage carcinogenesis test.

L7 ANSWER 80 OF 100 MEDLINE on STN
 ACCESSION NUMBER: 2001532135 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 11578803
 TITLE: Anti-tumor promoting effects of multiflorane-type triterpenoids and cytotoxic activity of karounidiol against human cancer cell lines.
 AUTHOR: Akihisa T; Tokuda H; Ichiishi E; Mukainaka T; Toriumi M; Ukiya M; Yasukawa K; Nishino H
 CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8308, Japan.. akihisa@chem.cst.nihon-u.ac.jp
 SOURCE: Cancer letters, (2001 Nov 8) Vol. 173, No. 1, pp. 9-14. Journal code: 7600053. ISSN: 0304-3835.
 PUB. COUNTRY: Ireland
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200112
 ENTRY DATE: Entered STN: 20011002
 Last Updated on STN: 20020122
 Entered Medline: 20011204

AB Forty-nine multiflorane-type **triterpenoids** consisting of 11 compounds isolated from the seeds of *Trichosanthes kirilowii* (Cucurbitaceae) and 38 of their derivatives have been evaluated for their inhibitory effects on **Epstein-Barr virus** early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate in Raji cells as a primary screening test for anti-tumor promoters. All of the compounds tested showed an inhibitory effect against EBV-EA activation, and among which 43 were revealed to possess remarkable activity with potencies either comparable to or stronger than that of glycyrrhetic acid, a known natural anti-tumor promoter. Their structure-activity relationship is discussed. Evaluation of the cytotoxic activity of karounidiol (27) against human cancer cell lines exhibited cytotoxicity especially against a human renal cancer.

L7 ANSWER 81 OF 100 MEDLINE on STN
 ACCESSION NUMBER: 2001519589 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 11566485
 TITLE: Cancer chemopreventive agents, serratane-type triterpenoids from *Picea jezoensis*.
 AUTHOR: Tanaka R; Minami T; Tsujimoto K; Matsunaga S; Tokuda H; Nishino H; Terada Y; Yoshitake A
 CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, 4-20-1 Nasahara, Takatsuki, 569-1094, Osaka, Japan.. tanakar@oysun01.oups.ac.jp
 SOURCE: Cancer letters, (2001 Oct 30) Vol. 172, No. 2, pp. 119-26. Journal code: 7600053. ISSN: 0304-3835.
 PUB. COUNTRY: Ireland
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200111
 ENTRY DATE: Entered STN: 20010924
 Last Updated on STN: 20011105
 Entered Medline: 20011101

AB Seven serratane-type **triterpenoids** isolated from the cuticle of *Picea jezoensis* (Sieb. et Zucc.) Carr. *jezoensis* (Pinaceae) and the stem bark of *Picea jezoensis* (Sieb. et Zucc.) Carr. *hondoensis* (Mayer) Rehder (Pinaceae) were studied their possible inhibitory effects on **Epstein-Barr virus** early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA). All compounds showed strong inhibitory effects on the EBV-EA activation, being stronger than that of oleanolic acid, which exerts on cancer preventive

activity in animal carcinogenesis models. Among these compounds, 13alpha, 14alpha-epoxy-3beta-methoxyserrat-21beta-ol and 3beta-methoxy-21alpha-hydroxyserrat-14-en-29-al were investigated for the inhibitory effects in a two-stage mouse skin carcinogenesis test on mouse skin using 7,12-dimethylbenz[a]anthracene as initiator and TPA as promoter. 13alpha,14alpha-Epoxy-3beta-methoxyserrat-21beta-ol was found to exhibit the excellent anti-tumor promoting activity in the in vivo carcinogenesis test.

L7 ANSWER 82 OF 100 MEDLINE on STN

ACCESSION NUMBER: 2001364982 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11425594
TITLE: Anti-tumor promoting diterpenes from the stem bark of Thuja standishii (Cupressaceae).
AUTHOR: Iwamoto M; Ohtsu H; Tokuda H; Nishino H; Matsunaga S; Tanaka R
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, 4-20-1 Nasahara, Takatsuki, Osaka 569-1094, Japan.
SOURCE: Bioorganic & medicinal chemistry, (2001 Jul) Vol. 9, No. 7, pp. 1911-21.
Journal code: 9413298. ISSN: 0968-0896.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200109
ENTRY DATE: Entered STN: 20010924
Last Updated on STN: 20010924
Entered Medline: 20010920

AB Three new labdane-type **diterpenoids**, labda-8(17),13-dien-15,12R-olid-19-oic acid (1), 12S-hydroxylabda-8(17),13(16),14-trien-19-oic acid (2) and 13-ethoxylabda-8(17),11,14-trien-19-oic acid (3), along with known **diterpenoids**, trans-communic acid (4), totarol (5), 12-methoxyabieta-8,11,13-trien-11-ol (6), and 7 alpha,8 alpha-epoxy-6 alpha-hydroxyabieta-9(11),13-dien-12-one (7) were isolated from the stem bark of Thuja standishii. The structures of 1--3 were established by spectroscopic methods and chemical conversion. These compounds together with standishinal (8), 12-hydroxy-6,7-seco-abieta-8,11,13-trien-6,7-dial (9) and 6 alpha-hydroxysugiol (10) were tested for their inhibitory effects on **Epstein--Barr virus** early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA), as a test for potential cancer chemopreventive agents. Compound 10 showed strong inhibitory effect on EBV-EA induction (100% inhibition at 1000 mol ratio/TPA), and compounds 2 and 6 showed moderate inhibitory effects on EBV-EA induction. In addition, 15-oxolabda-8(17),11Z,13E-trien-19-oic acid (11) was found to exhibit the anti-tumor promoting activity in two-stage mouse skin carcinogenesis test using 7,12-dimethylbenz[a]anthracene and TPA.

L7 ANSWER 83 OF 100 MEDLINE on STN

ACCESSION NUMBER: 2001175462 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11270723
TITLE: Abietane **diterpenoids** from the cones of Larix kaempferi and their inhibitory effects on **Epstein--Barr virus** activation.
AUTHOR: Ohtsu H; Tanak R; In Y; Matsunaga S; Tokuda H; Nishino H
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Takatsuki, Japan.
SOURCE: Planta medica, (2001 Feb) Vol. 67, No. 1, pp. 55-60.
Journal code: 0066751. ISSN: 0032-0943.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English

FILE SEGMENT: Priority Journals
ENTRY MONTH: 200107
ENTRY DATE: Entered STN: 20010716
Last Updated on STN: 20010716
Entered Medline: 20010712

AB Four known (1-3, 8) and four new abietane diterpenes, 15-hydroxy-8alpha,14alpha,12alpha,13alpha-diepoxyabietan-18-oic acid (4), 7alpha,8alpha,13beta,14beta-diepoxyabietan-18-oic acid (5), 18-nor-abieta-8,11,13-triene-4alpha,7alpha,15-triol (6), and abieta-8,11,13-triene-7alpha,15,18-triol (7) were isolated from the CHCl₃ extract of the cones of *Larix koempferi*. A known compound, 13,14-seco-13,14-dioxoabiet-13-en-18-oic acid (8) was isolated from natural sources for the first time. Their structures were determined by chemical and spectroscopic methods including 1D and 2D NMR techniques. The absolute stereostructure of 5 was determined by X-ray crystallographic analysis. The inhibitory effects of these compounds on Epstein-Barr virus early antigen (EBV-EA) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA), were examined as a primary screening for antitumor promoters.

L7 ANSWER 84 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2001091891 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11090965
TITLE: Cancer chemopreventive agents, labdane diterpenoids from the stem bark of *Thuja standishii* (Gord.) Carr.
AUTHOR: Tanaka R; Ohtsu H; Iwamoto M; Minami T; Tokuda H; Nishino H; Matsunaga S; Yoshitake A
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, 4-20-1 Nasahara, Takatsuki, 569-1094, Osaka, Japan.. tanakar@oysun01.oups.ac.jp
SOURCE: Cancer letters, (2000 Dec 20) Vol. 161, No. 2, pp. 165-70. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200101
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010125

AB Seven labdane-type **diterpenoids** from the stem bark of *Thuja standishii* (Gord.) Carr. (Cupressaceae) and their analogues showed strong inhibitory effects on **Epstein-Barr virus** early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA). Among these compounds, 15,16-bisnor-13-oxolabda-8(17), 11E-dien-19-oic acid was revealed to have the strongest inhibitory effect on the EBV-EA activation, being stronger than that of beta-carotene which has been intensively studied in cancer prevention using animal models. 15,16-bisnor-13-Oxolabda-8(17), 11E-dien-19-oic acid was also found to exhibit the excellent anti-tumor promoting activity in two-stage mouse skin carcinogenesis test using 7,12-dimethylbenz[a]anthracene and TPA.

L7 ANSWER 85 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2001090891 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11105568
TITLE: Bioactive triterpenoids from the stem bark of *Picea glehnii*.
AUTHOR: Tanaka R; Kinouchi Y; Tokuda H; Nishino H; Matsunaga S
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Japan.. tanakar@oysun01.oups.ac.jp
SOURCE: Planta medica, (2000 Oct) Vol. 66, No. 7, pp. 630-4. Journal code: 0066751. ISSN: 0032-0943.
PUB. COUNTRY: GERMANY; Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English

FILE SEGMENT: Priority Journals
ENTRY MONTH: 200101
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010125

AB Two new **triterpenoids**, 3 alpha-methoxyserrat-14-en-21 beta-yl formate (1), and 24-methylcycloartenone (2), were isolated from the stem bark of *Picea glehni* (Fr. Schm.) Masters together with three known **triterpenoids**, 3 alpha-methoxyserrat-14-en-21 beta-ol, 3 beta-methoxyserrat-14-en-21 beta-ol, and piceanonol A. Compounds 1, 2, and a synthetic sample, 3 alpha-methoxyserrat-13-en-21 beta-yl formate showed potent inhibitory effects on **Epstein-Barr virus** early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate (TPA).

L7 ANSWER 86 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2001084505 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10976526
TITLE: Anti-tumor promoting effects of sesquiterpenes from *Maytenus cuzcoina* (Celastraceae).
AUTHOR: Gonzalez A G; Tincusi B M; Bazzocchi I L; Tokuda H; Nishino H; Konoshima T; Jimenez I A; Ravelo A G
CORPORATE SOURCE: Instituto Universitario de Bio-Organica Antonio Gonzalez, Universidad de La Laguna, Tenerife, Canary Islands, Spain.
SOURCE: Bioorganic & medicinal chemistry, (2000 Jul) Vol. 8, No. 7, pp. 1773-8.
Journal code: 9413298. ISSN: 0968-0896.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200101
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010118

AB Ten **sesquiterpenoids** (1-10), with a dihydro-beta-agarofuran skeleton, were isolated from *Maytenus cuzcoina* (Celastraceae). Their structures were elucidated on the basis of spectral analysis, including homo- and heteronuclear correlations NMR experiments (COSY, ROESY, HMQC and HMBC), and chemical correlations. The compounds have been tested for their inhibitory effects on **Epstein-Barr virus** early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA), as a test for potential cancer chemopreventive agents. Compounds 1-3, 6 and 7 showed strong inhibitory effects on EBV-EA induction (100% inhibition at 1000 mol ratio/TPA). Their structure-activity relationship is discussed.

L7 ANSWER 87 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2001075954 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11000023
TITLE: Chemical constituents of *Clausena excavata*: isolation and structure elucidation of novel furanone-coumarins with inhibitory effects for tumor-promotion.
AUTHOR: Ito C; Itoigawa M; Katsuno S; Omura M; Tokuda H; Nishino H; Furukawa H
CORPORATE SOURCE: Faculty of Pharmacy, Meijo University, Tempaku, Nagoya 468-8503, Japan.
SOURCE: Journal of natural products, (2000 Sep) Vol. 63, No. 9, pp. 1218-24.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals

ENTRY MONTH: 200101
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010111

AB A study of the chemical constituents of the leaves of *Clausena excavata* cultivated in a greenhouse led to the isolation and identification of 10 new furanone-coumarins named clauslactones A (1), B (2), C (3), D (4), E (5), F (6), G (7), H (8), I (9), and J (10), together with a known carbazole, clauszoline M, and a coumarin, umbelliferone. The new coumarins contain a C(10) **terpenoid** side chain with a furanone (gamma-lactone) moiety. Further, in clauslactones A-D (1-4), the **terpenoid** side chain was shown to be linked to the 7,8-dioxygenated coumarin skeleton through a 1, 4-dioxane ring system. This is the first example of coumarins with these structural characteristics in nature. These furanone-coumarins were found to exhibit inhibitory activity against 12-O-tetradecanoylphorbol-13-acetate-induced **Epstein-Barr virus** early antigen activation in Raji cells.

L7 ANSWER 88 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2001062337 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10959585
TITLE: Ichthyotoxic phloroglucinol derivatives from *Dryopteris fragrans* and their anti-tumor promoting activity.
AUTHOR: Ito H; Muranaka T; Mori K; Jin Z X; Tokuda H; Nishino H; Yoshida T
CORPORATE SOURCE: Faculty of Pharmaceutical Sciences, Okayama University, Tsushima, Japan.
SOURCE: Chemical & pharmaceutical bulletin, (2000 Aug) Vol. 48, No. 8, pp. 1190-5.
Journal code: 0377775. ISSN: 0009-2363.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200012
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20001228

AB Two new ichthyotoxic compounds, aspidin PB (8) and dryofragin (9), along with three known phloroglucinol derivatives (1-3) and five **terpenoids**, were isolated from the whole herbs of *Dryopteris fragrans* by toxicity-directed fractionation using *Oryzias latipes* (Japanese name; medaka). The structures of the new compounds were determined by spectroscopic methods including 2D NMR techniques. Amongst the isolates, aspidin PB (8), dryofragin (9), and 1-5 exhibited potent ichthyotoxic activity against medaka with a median tolerance limit (TL_m after 24 h) of 1.2-4.3 microg/ml. These compounds which are toxic to fish also had a potent inhibitory effect on the activation of **Epstein-Barr virus** early-antigen (EBV-EA) induced by tetradecanoyl phorbol 13-acetate, which is an in vitro short-term assay for anti-tumor promoting agents. Aspidin BB (2) and albicanol (4), which exhibited strong inhibitory effects on the EBV-EA activation, significantly suppressed an in vivo two-stage carcinogenesis on mouse skin.

L7 ANSWER 89 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2000429355 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10869208
TITLE: Potential antitumor-promoting diterpenoids from the stem bark of *Picea glehnii*.
AUTHOR: Kinouchi Y; Ohtsu H; Tokuda H; Nishino H; Matsunaga S; Tanaka R
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of

Pharmaceutical Sciences, 4-20-1 Nasahara, Takatsuki, Osaka
569-1094, Japan.
SOURCE: Journal of natural products, (2000 Jun) Vol. 63, No. 6, pp.
817-20.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200009
ENTRY DATE: Entered STN: 20000922
Last Updated on STN: 20000922
Entered Medline: 20000913

AB A novel rearranged labdane-type **diterpenoid**,
19(4-->3)abeo-8alpha, 13(S)-epoxylabda-4(18),14-diene (1), and two new
abietane-type **diterpenoids**, 19-nor-abieta-4(18),8,11,13-tetraen-
7-one (2) and 12-hydroxydehydroabietic acid (3) were isolated from the
stem bark of Picea glehnii, together with seven known **diterpenoids**
-13-epimanoyl oxide (4), dehydroabietic acid (5), (11E)-14,
15-bisnor-8alpha-hydroxy-11-labden-13-one (6), abieta-8,11, 13-trien-7-one
(7), 9alpha,13alpha-epidioxyabiet-8(14)-en-18-oic acid (8),
9,10alpha-epoxy-9,10-seco-abieta-8,11,13-trien-18-oic acid (9), and methyl
15-hydroxy-7-oxo-dehydroabietate (10). Compounds 5-8 and 10 showed potent
inhibitory effects on **Epstein-Barr virus**
early antigen (EBV-EA) activation induced by the tumor promoter
12-O-tetradecanoylphorbol 13-acetate.

L7 ANSWER 90 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2000117928 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10650087
TITLE: Bioactive steroids from the whole herb of Euphorbia
chamaesyce.
AUTHOR: Tanaka R; Kasubuchi K; Kita S; Tokuda H; Nishino H;
Matsunaga S
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of
Pharmaceutical Sciences, 4-20-1 Nasahara, Takatsuki, Osaka
569-1094, Japan.. tanakar@oysun01.oups.ac.jp
SOURCE: Journal of natural products, (2000 Jan) Vol. 63, No. 1, pp.
99-103.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200003
ENTRY DATE: Entered STN: 20000320
Last Updated on STN: 20000320
Entered Medline: 20000306

AB Three new ergostane-type steroids, 3beta-hydroxy-4alpha,
14alpha-dimethyl-5alpha-ergosta-8,24(28)-dien-11-one (1); 3beta,
11alpha-dihydroxy-4alpha,14alpha-dimethyl-5alpha-ergosta-8,
24(28)-dien-7-one (2); and 3beta,7alpha-dihydroxy-4alpha,
14alpha-dimethyl-5alpha-ergosta-8,24(28)-dien-11-one (3), were isolated,
together with two known **triterpenoids**, wrightial and
lup-20(30)-ene-3beta,29-diol from the whole herb of Euphorbia chamaesyce.
Compound 3 showed a potent inhibitory effect on **Epstein-**
Barr virus early antigen activation induced by the tumor
promoter 12-O-tetradecanoylphorbol 13-acetate (TPA).

L7 ANSWER 91 OF 100 MEDLINE on STN
ACCESSION NUMBER: 1999334720 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10408235
TITLE: Anti-carcinogenic activity of Taraxacum plant. II.
AUTHOR: Takasaki M; Konoshima T; Tokuda H; Masuda K; Arai Y;

CORPORATE SOURCE: Shiojima K; Ageta H
 SOURCE: Kyoto Pharmaceutical University, Japan.
 Biological & pharmaceutical bulletin, (1999 Jun) Vol. 22,
 No. 6, pp. 606-10.
 Journal code: 9311984. ISSN: 0918-6158.

PUB. COUNTRY: Japan
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199909
 ENTRY DATE: Entered STN: 19990925
 Last Updated on STN: 19990925
 Entered Medline: 19990914

AB Eleven **triterpenoids** (1-11) from the roots of *Taraxacum japonicum* (Compositae) were examined for their inhibitory effects on **Epstein-Barr virus** early antigen (EBV-EA) induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA), in Raji cells as a primary screening test for anti-tumor-promoters (cancer chemopreventive agents). Of these **triterpenoids**, taraxasterol (1) and taraxerol (7) exhibited significant inhibitory effects on EBV-EA induction, but the inhibitory effects of their acetates 2 and 8 were weaker than those of 1 and 7. Furthermore, 1 and 7 exhibited potent anti-tumor-promoting activity in the two-stage carcinogenesis tests of mouse skin using 7,12-dimethylbenz[*a*]anthracene (DMBA) as an initiator and TPA as a promoter, and 1 showed a remarkable inhibitory effect on mouse spontaneous mammary tumors using C3H/OuJ mouse. These results strongly suggested that taraxasterol (1) could be a valuable chemopreventive agent.

L7 ANSWER 92 OF 100 MEDLINE on STN
 ACCESSION NUMBER: 97238741 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 9122615
 TITLE: Influence of *Quillaja saponaria* **triterpenoid** content on the immunomodulatory capacity of **Epstein-Barr virus** iscoms.

AUTHOR: Dotsika E; Karagouni E; Sundquist B; Morein B; Morgan A; Villacres-Eriksson M
 CORPORATE SOURCE: Hellenic Pasteur Institute, Athens, Greece.
 SOURCE: Scandinavian journal of immunology, (1997 Mar) Vol. 45, No. 3, pp. 261-8.
 Journal code: 0323767. ISSN: 0300-9475.

PUB. COUNTRY: ENGLAND: United Kingdom
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199704
 ENTRY DATE: Entered STN: 19970506
 Last Updated on STN: 20021218
 Entered Medline: 19970422

AB The immune responses to immunostimulating complexes (iscoms) containing recombinant **Epstein-Barr virus** (EBV) gp340 envelope protein was evaluated in BALB/c (H-2(d)) and CBA (H-2(k)) mice. Gp340-iscoms were used either with a low content of *Quillaja* **triterpenoid** adjuvant (L-iscoms) or supplemented with additional *Quillaja* adjuvant in the form of iscomatrix (S-iscoms). Class and subclass distribution of anti-gp340 antibodies, EBV-neutralizing antibodies, antigen-specific T cell proliferation and cytokine production were determined and these results compared to those obtained by immunization with non-adjuvated gp340. The H-2(d) and H-2(k) mice were characterized as low or high responders in respect to the level of specific anti-gp340 antibodies, secretion of IgG2a isotype, antigen-specific lymphoproliferative capacity, interferon-gamma (IFN-gamma) and interleukin-10 (IL-10) production in the basic immunizations with gp340. While presentation of the antigen in iscom

formulations with low levels of Quillaja **triterpenoids** induces a moderate enhancement of the immune responses in the low responder H-2(d) mice, supplementation with high levels of iscomatrix immunomodulator was required to enhance the immune responses in the high responder H-2(k) mice. In both mouse strains subcutaneous immunization with S-iscoms resulted in a significant increase of IgG1- and IgG2a-specific antibodies, as well as in strong antigen-specific proliferative response confirmed by the simultaneous cytokine production. The enhanced antigen-specific secretion of IL-2 and IFN-gamma together with the abrogation of IL-10 and the absence of IL-4 indicates that the responses were driven towards a Th1-type rather than Th2-type immune response. The S-iscom formulations minimized the differences in immune responses between the two mouse strains, but the capacity of immune sera to neutralize EBV transformation in vitro remained completely strain-dependent. These data indicate that immune responses generated by iscoms can be manipulated by altering the **triterpenoid** composition of the iscoms and that the levels of **triterpenoids** can determine whether or not a Th1-type response is made.

L7 ANSWER 93 OF 100 MEDLINE on STN

ACCESSION NUMBER: 96437162 MEDLINE

DOCUMENT NUMBER: PubMed ID: 8839970

TITLE: Anti-tumor-promoting activities of triterpenoids from ferns. I.

AUTHOR: Konoshima T; Takasaki M; Tokuda H; Masuda K; Arai Y; Shiojima K; Ageta H

CORPORATE SOURCE: Kyoto Pharmaceutical University, Japan.

SOURCE: Biological & pharmaceutical bulletin, (1996 Jul) Vol. 19, No. 7, pp. 962-5.

Journal code: 9311984. ISSN: 0918-6158.

PUB. COUNTRY: Japan

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199701

ENTRY DATE: Entered STN: 19970219

Last Updated on STN: 19970219

Entered Medline: 19970130

AB To search for possible anti-tumor-promoters (cancer chemopreventive agents), we carried out primary screening of 23 **triterpenoid** hydrocarbons (1-23) isolated from ferns using an in vitro synergistic assay system. Of these **triterpenoids**, hop-17(21)-ene (2), neohop-13(18)-ene (3), neohop-12-ene (4), taraxerane (17), multiflor-9(11)-ene (18), multiflor-8-ene (19), glutin-5(10)-ene (21) and taraxastane (23) exhibited remarkable inhibitory effects on **Epstein-Barr virus** (EBV) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA). Further, compounds 2 and 3 exhibited remarkable anti-tumorpromoting effects on mouse skin tumor promotion in an in vivo two-stage carcinogenesis test using 7,12-dimethylbenz[a]anthracene (DMBA) as an initiator and TPA as a promoter.

L7 ANSWER 94 OF 100 MEDLINE on STN

ACCESSION NUMBER: 96422334 MEDLINE

DOCUMENT NUMBER: PubMed ID: 8824951

TITLE: Inhibitory effects of lantadenes and related **triterpenoids** on **Epstein-Barr virus** activation.

AUTHOR: Inada A; Nakanishi T; Tokuda H; Nishino H; Iwashima A; Sharma O P

CORPORATE SOURCE: Faculty of Pharmaceutical Sciences, Setsunan University, Osaka, Japan.

SOURCE: Planta medica, (1995 Dec) Vol. 61, No. 6, pp. 558-9.

Journal code: 0066751. ISSN: 0032-0943.

PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199612
ENTRY DATE: Entered STN: 19970128
Last Updated on STN: 19970128
Entered Medline: 19961202

AB To search for possible antitumor promoters, inhibitory effects of lantadenes and related **triterpenoids** from *Lantana camara* L. (Verbenaceae) on **Epstein-Barr virus** activation, were tested. The substitutions on the carboxylic acid through an ester bond might play an important role in the activity.

L7 ANSWER 95 OF 100 MEDLINE on STN

ACCESSION NUMBER: 95261350 MEDLINE

DOCUMENT NUMBER: PubMed ID: 7742799

TITLE: Inhibitory effects of cucurbitane **triterpenoids** on **Epstein-Barr virus**

AUTHOR: activation and two-stage carcinogenesis of skin tumor. II. Konoshima T; Takasaki M; Kozuka M; Nagao T; Okabe H; Irino N; Nakasumi T; Tokuda H; Nishino H

CORPORATE SOURCE: Kyoto Pharmaceutical University, Japan.

SOURCE: Biological & pharmaceutical bulletin, (1995 Feb) Vol. 18, No. 2, pp. 284-7.
Journal code: 9311984. ISSN: 0918-6158.

PUB. COUNTRY: Japan

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199506

ENTRY DATE: Entered STN: 19950621

Last Updated on STN: 19950621

Entered Medline: 19950615

AB To search for possible anti-tumor-promoters, we carried out a primary screening of twenty-four 29-nor-cucurbitacin glucosides isolated from the roots of *Cayaponia tayuya* (Cucurbitaceae) using an in vitro synergistic assay system. Of these glucosides, cayaponosides B (5), B3 (7), D (8), D3b (22) and C2 (23) exhibited significant inhibitory effects on Epstein-Barr virus (EBV) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA). Furthermore, 5 and 23 exhibited remarkable anti-tumor-promoting effects on mouse skin tumor promotion in an in vivo two-stage carcinogenesis test.

L7 ANSWER 96 OF 100 MEDLINE on STN

ACCESSION NUMBER: 95004242 MEDLINE

DOCUMENT NUMBER: PubMed ID: 7920430

TITLE: Inhibitory effects of cucurbitane **triterpenoids** on **Epstein-Barr virus**

AUTHOR: activation and two-stage carcinogenesis of skin tumors. Konoshima T; Takasaki M; Tatsumoto T; Kozuka M; Kasai R; Tanaka O; Nie R L; Tokuda H; Nishino H; Iwashima A

CORPORATE SOURCE: Kyoto Pharmaceutical University, Japan.

SOURCE: Biological & pharmaceutical bulletin, (1994 May) Vol. 17, No. 5, pp. 668-71.
Journal code: 9311984. ISSN: 0918-6158.

PUB. COUNTRY: Japan

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199410

ENTRY DATE: Entered STN: 19941222

Last Updated on STN: 19941222

Entered Medline: 19941025

AB To search for possible anti-tumor-promoters, we carried out a primary screening of 21 cucurbitane **triterpenoids** using an in vitro assay system. Of these **triterpenoids**, scandenoside R6 (6), 23,24-dihydrocucurbitacin F (14), 25-acetyl-23,24-dihydrocucurbitacin F (15), 2-O-beta-D-glucopyranosyl-23,24-dihydrocucurbitacin F (17) and cucurbitacin F (18) exhibited significant inhibitory effects on **Epstein-Barr virus** (EBV) activation induced by the tumor promoter, 12-O-tetradecanoyl-phorbol-13-acetate (TPA). Further, compounds 14 and 17 exhibited remarkable anti-tumor-promotion effects on mouse skin tumor promotion in an in vivo two-stage carcinogenesis test.

L7 ANSWER 97 OF 100 MEDLINE on STN
ACCESSION NUMBER: 92065270 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1955883
TITLE: Constituents of leguminous plants, XIII. New triterpenoid saponins from Wistaria brachybotrys.
AUTHOR: Konoshima T; Kozuka M
CORPORATE SOURCE: Kyoto Pharmaceutical University, Misasagi, Yamashina-ku 607, Japan.
SOURCE: Journal of natural products, (1991 May-Jun) Vol. 54, No. 3, pp. 830-6.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199112
ENTRY DATE: Entered STN: 19920124
Last Updated on STN: 19970203
Entered Medline: 19911230

AB Two new **triterpenoid** saponins, wistariasaponins D [1] and G [2], and the known saponin dehydrosoyasaponin I [3] were isolated from the knots of Wistaria brachybotrys. The Structures of 1 and 2 were determined from their chemical and physicochemical evidence. The inhibitory effects of these saponins on the activation of **Epstein-Barr virus** early antigen that was induced by a tumor promoter were also tested for the primary screening of antitumor-promoting activities.

L7 ANSWER 98 OF 100 MEDLINE on STN
ACCESSION NUMBER: 88253243 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2838164
TITLE: Inhibitory effects of 12-O-tetradecanoylphorbol-13-acetate and teleocidin B induced Epstein-Barr virus by saponin and its related compounds.
AUTHOR: Tokuda H; Konoshima T; Kozuka M; Kimura T
CORPORATE SOURCE: Department of Microbiology, Faculty of Medicine, Kyoto University, Japan.
SOURCE: Cancer letters, (1988 Jun 30) Vol. 40, No. 3, pp. 309-17.
Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198808
ENTRY DATE: Entered STN: 19900308
Last Updated on STN: 19900308
Entered Medline: 19880804

AB The inhibitory effects of triterpene glycosides and monoterpene glycosides on 12-O-tetradecanoylphorbol-13-acetate (TPA) and teleocidin B in the **Epstein-Barr virus** (EBV) activation in Raji cells were studied. Concomitant treatment of Raji cells with TPA or Teleocidin B and these glycosides showed the inhibition of EBV activation. We herein report in vitro structure-activity studies using a biological test system on a variety of triterpene glycosides having 1 sugar chain

(monodesmoside), 2 sugar chain (bidesmoside) and an acyl side-chain. Among these glycosides, triterpene 3-O-glycosides and acylated saponin exhibited an effective inhibition of EBV activation; therefore, the sugar chain at C-3 of the triterpene and/or the acyl side-chain were determined to be essential to the inhibitory activities in this test system. The data suggested that these **triterpenoid** glycosides which were originally used as herbal drugs and folk remedies in many areas of the world, were in fact inhibitory compounds, thus explaining the EBV activation in the in vitro test system.

L7 ANSWER 99 OF 100 MEDLINE on STN

ACCESSION NUMBER: 87159881 MEDLINE

DOCUMENT NUMBER: PubMed ID: 3103947

TITLE: Structure-activity studies of the indole alkaloid tumor promoter teleocidins.

AUTHOR: Irie K; Hagiwara N; Tokuda H; Koshimizu K

SOURCE: Carcinogenesis, (1987 Apr) Vol. 8, No. 4, pp. 547-52.

Journal code: 8008055. ISSN: 0143-3334.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 198705

ENTRY DATE: Entered STN: 19900303

Last Updated on STN: 19900303

Entered Medline: 19870506

AB New teleocidin derivatives with various substituents at positions 2, 5 and 7 of the indole ring were prepared from (-)-indolactam V, which is the fundamental structure of teleocidins and has a tumor-promoting activity, to examine the contribution of the alkyl substituents of teleocidins to the activity. Their possible tumor-promoting activities in vivo were evaluated by **Epstein-Barr virus** early antigen-inducing activity and inhibition of specific binding of [3H]TPA to a mouse epidermal particulate fraction. These two biological activities correlated well for each derivative. Large substituents at positions 2 and 5 remarkably lowered the activities, indicating that the structural requirements for the activities of these domains are especially strict. To investigate in detail the contribution of position 2 of (-)-indolactam V to the activities, new microbial metabolites, (-)-2-oxy-indolactam V, and blastmycetin B and C, were also tested. These compounds proved to be inactive, suggesting that the double bond at position 2 plays an important role for the activities. Substituents at position 7 generally enhanced the activities and even blastmycetin A, which is a dimer of (-)-indolactam V, showed high activities. The effects of the substituents on binding ability to the 12-O-tetradecanoylphorbol-13-acetate receptor were analyzed quantitatively using physicochemical substituent parameters and regression analysis. The results exhibited the fact that hydrophobicity of the substituents plays a critical role for receptor binding, and supported the hypothesis that the **monoterpenoid** moiety of teleocidins is involved in the non-specific hydrophobic interaction with phospholipids in cell membrane.

L7 ANSWER 100 OF 100 MEDLINE on STN

ACCESSION NUMBER: 86007125 MEDLINE

DOCUMENT NUMBER: PubMed ID: 2995261

TITLE: Structure-activity relationship in the induction of Epstein-Barr virus by teleocidin derivatives.

AUTHOR: Irie K; Tokuda H; Hagiwara N; Koshimizu K; Hayashi H; Murao S; Ito Y

SOURCE: International journal of cancer. Journal international du cancer, (1985 Oct 15) Vol. 36, No. 4, pp. 485-8.

Journal code: 0042124. ISSN: 0020-7136.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198511
ENTRY DATE: Entered STN: 19900321
Last Updated on STN: 19900321
Entered Medline: 19851112

AB New derivatives of (-)-indolactam V (Fig. 1), which have the basic ring-structure of teleocidins without the **monoterpenoid** moiety, were prepared and their **Epstein-Barr virus** early antigen (EBV-EA)-inducing activity was tested. (-)-14-O-Alkyl indolactam Vs (2 and 3) showed little induction of EBV-EA, while (-)-14-dehydroxyindolactam V (4) and (-)-14-chloroindolactam V (5) proved to be potent EBV-EA inducers, though their activities (EC50) were about 10 times weaker than that of (-)-indolactam V (1). These results indicate that the hydroxyl group at C-14 is not indispensable for EBV-EA induction and can be replaced. The activities (EC50) of (-)-1-N-methyl, (-)-1-N-ethyl, and (-)-1-N-butyl indolactam V (10, 11, and 12) were about 5 times weaker than that of (-)-indolactam V (1), while (-)-1-N-hexyl and (-)-1-N-octyl indolactam V (13 and 14) were even less active, suggesting that the free imino group of the indole ring in (-)-indolactam V (1) plays an important role in the activity, and that the activity cannot be enhanced by alkylation at the N-1 position of (-)-indolactam V (1).

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(FILE 'HOME' ENTERED AT 13:08:49 ON 19 APR 2006)

FILE 'CAPLUS, MEDLINE' ENTERED AT 13:09:00 ON 19 APR 2006

| | | | | |
|----|-----|---|-------------------------|--------------------|
| L1 | 6 | S | GLYCYRRHIZIN (P) | EPSTEIN BARR VIR? |
| L2 | 6 | S | GLYCYRRHIZIN (P) | EPSTEIN BARR |
| L3 | 4 | S | GLYCYRRHIZIC ACID (P) | EPSTEIN BARR |
| L4 | 5 | S | GLYCYRRHETINIC ACID (P) | EPSTEIN BARR |
| L5 | 12 | S | TERPENOID? (P) | EPSTEIN BARR |
| L6 | 100 | S | ?TERPENOID? (P) | EPSTEIN BARR |
| L7 | 100 | S | ?TERPENOID? (P) | EPSTEIN BARR VIRUS |
| L8 | 3 | S | L7 AND ADMINIST? | |

L1 ANSWER 12 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1994:153711 CAPLUS

DOCUMENT NUMBER: 120:153711

TITLE: Tumor promotion inhibitors containing glycyrrhetic acid monoglucuronide

INVENTOR(S): Kozuka, Mutsuo; Tokuda, Harukuni; Mizutani, Kenji; Tamura, Kokichi; Kuramoto, Takashi

PATENT ASSIGNEE(S): Maruzen Seiyaku Kk, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|----------|
| ----- | ---- | ----- | ----- | ----- |
| JP 05306228 | A2 | 19931119 | JP 1992-129884 | 19920424 |
| JP 3163161 | B2 | 20010508 | | |

PRIORITY APPLN. INFO.: JP 1992-129884 19920424

AB Tumor promotion inhibitors contain **glycyrrhetic** acid monoglucuronide (I) or its water-soluble salts as active ingredient. TPA-induced formation of **Epstein-Barr** virus early antigen was inhibited by I [at 1000 (by mol.) to TPA] by 100%, vs. 84.4% by **glycyrrhetic** acid.

L1 ANSWER 1 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:520771 CAPLUS
DOCUMENT NUMBER: 143:165998
TITLE: Cancer preventive agents, Part 2: Synthesis and
evaluation of 2-phenyl-4-quinolone and
9-oxo-9,10-dihydroacridine derivatives as novel
antitumor promoters
AUTHOR(S): Nakamura, Seikou; Kozuka, Mutsuo; Bastow, Kenneth F.;
Tokuda, Harukuni; Nishino, Hoyoku; Suzuki, Madoka;
Tatsuzaki, Jin; Morris Natschke, Susan L.; Kuo,
Sheng-Chu; Lee, Kuo-Hsiung
CORPORATE SOURCE: Natural Products Laboratory, School of Pharmacy,
University of North Carolina, Chapel Hill, NC, 27599,
USA
SOURCE: Bioorganic & Medicinal Chemistry (2005), 13(14),
4396-4401
CODEN: BMECEP; ISSN: 0968-0896
PUBLISHER: Elsevier Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 143:165998
AB 2-Phenyl-4-quinolone and 9-oxo-9,10-dihydroacridine derivs. were
synthesized and screened as potential antitumor promoters by examining the
ability of the compds. to inhibit **Epstein-Barr** virus
early antigen (EBV-EA) activation induced by the tumor promoter
12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells. Interestingly,
compds. 14, 15, and 17 showed similar inhibitory effects (89-92%, 66-69%,
and 24-29% at 1000, 500, and 100 mol ratio to TPA, resp.) against EBV-EA
with potencies comparable to those of **glycyrrhetic** acid, a known
natural antitumor-promoter.
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 2 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:499243 CAPLUS
DOCUMENT NUMBER: 139:374307
TITLE: Mechanism of action of **glycyrrhizic** acid in
inhibition of **Epstein-Barr** virus
replication in vitro
AUTHOR(S): Lin, Jung-Chung
CORPORATE SOURCE: College of Medicine, Department of Microbiology, Tzu
Chi University, Hualien, 970, Taiwan
SOURCE: Antiviral Research (2003), 59(1), 41-47
CODEN: ARSRDR; ISSN: 0166-3542
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors report here that **glycyrrhizic** acid (GL), a component of
licorice root (*Glycyrrhiza radix*), is active against EBV replication in
superinfected Raji cells in a dose-dependent fashion. The IC50 values for
viral inhibition and cell growth were 0.04 and 4.8 mM, resp. The
selectivity index (ratio of IC50 for cell growth to IC50 for viral DNA
synthesis) was 120. Time of addition expts. suggested that GL interferes
with an early step of the EBV replication cycle (possibly penetration).
GL had no effect on viral adsorption nor did it inactivate EBV particles.
Thus, GL represents a new class of anti-EBV compds. with a mode of action
different from that of the nucleoside analogs that inhibit viral DNA
polymerase.
REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 3 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:289081 CAPLUS

DOCUMENT NUMBER: 139:301037
TITLE: Anti-carcinogenic activities of natural sweeteners
AUTHOR(S): Konoshima, Takao; Takasaki, Midori
CORPORATE SOURCE: Lab. Pharmaceutical Sci. Natural Resources, Kyoto
Pharmaceutical Univ., Tokyo, 607-8414, Japan
SOURCE: Foods & Food Ingredients Journal of Japan (2003),
208(3), 184-191
CODEN: FFIJER; ISSN: 0919-9772
PUBLISHER: FFI Janaru
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A review. Many kinds of antitumor agents and their related compds. have been isolated from natural resources, and the medicinal sciences have made rapid progress in the treatment of carcinogenesis, however, cancer currently remains a tragic disease and is one of the major causes of death worldwide. Furthermore, perfectly effective antitumor agents free from side effects have not been found yet, and these side effects of antitumor agents are serious problems in the treatment of cancer. Therefore, the advancement of chemoprevention is important, as well as the development of cancer treatment. To search for possible cancer-chemopreventive agents from natural sources, several natural sweeteners were screened by the in vitro assay indicated by the inhibitory effects of **Epstein-Barr** virus early antigen (EBV-EA) induction. Of active compds. that showed the remarkable inhibitory effects on the EBV-EA induction, stevioside, from the leaves of *Stevia rebaudiana*, and mogroside V, from the fruits of *Momordica grosvenori*, exhibited significant inhibitory effects on the two-stage mouse skin carcinogenesis in vivo induced by 7,12-dimethylbenzy[a]anthracene (DMBA) and 12-O-tetradecanoylphorbol-13-acetate (TPA). The inhibitory effects of these sweeteners are stronger than that of **glycyrrhizin**, which had been known as an anti-tumor-promoter in chemical carcinogenesis. Furthermore, stevioside also inhibited mouse skin carcinogenesis initiated by peroxynitrite (ONOO). These results suggested that stevioside and mogroside V, which have been used as an alternative sweetener to sucrose might be also valuable as chemopreventive agents for chemical carcinogenesis.

L1 ANSWER 4 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:144 CAPLUS
DOCUMENT NUMBER: 138:183970
TITLE: Polyprenylated benzophenones from *Garcinia assigu* and their potential cancer chemopreventive activities
AUTHOR(S): Ito, Chihiro; Itoigawa, Masataka; Miyamoto, Yoshiaki; Onoda, Saori; Rao, K. Sundar; Mukainaka, Teruo; Tokuda, Harukuni; Nishino, Hoyoku; Furukawa, Hiroshi
CORPORATE SOURCE: Faculty of Pharmacy, Meijo University, Tempaku, Nagoya, 468-8503, Japan
SOURCE: Journal of Natural Products (2003), 66(2), 206-209
CODEN: JNPRDF; ISSN: 0163-3864
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In a further study on the chemical constituents of *Garcinia assigu*, two new benzophenones corresponding to the 13-O-Me ethers (1 and 2) of the known isogarcinol and garcinol, resp., were isolated and characterized, along with known benzophenones (3-6). Inhibitory effects of the benzophenones isolated from this plant on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate in Raji cells and their radical-scavenging ability against 1,1-diphenyl-2-picrylhydrazyl were demonstrated. The cyclized polyprenylbenzophenones (1-5) showed comparable or stronger potential cancer chemopreventive activity when compared to **glycyrrhetic** acid, a known anti-tumor promoter.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 5 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:640085 CAPLUS

DOCUMENT NUMBER: 137:309776

TITLE: Cancer-chemopreventive effects of natural sweeteners and related compounds

AUTHOR(S): Konoshima, Takao; Takasaki, Midori

CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607-8414, Japan

SOURCE: Pure and Applied Chemistry (2002), 74(7), 1309-1316

CODEN: PACHAS; ISSN: 0033-4545

PUBLISHER: International Union of Pure and Applied Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB To search for possible cancer-chemopreventive agents from natural resources, several natural sweeteners were screened by the in vitro assay indicated by the inhibitory effects of **Epstein-Barr** virus early antigen (EBV-EA) induction. Of active compds. that showed the remarkable inhibitory effects on the EBV-EA induction, stevioside, from the leaves of *Stevia rebaudiana*, and mogroside V, from the fruits of *Momordica grosvenori*, exhibited significant inhibitory effects on the two-stage mouse skin carcinogenesis in vivo induced by 7,12-dimethylbenz[*a*]anthracene (DMBA) and 12-O-tetradecanoylphorbol-13-acetate (TPA). The inhibitory effect of stevioside is stronger than that of **glycyrrhizin**, which had been known as an antitumor-promoter in chemical carcinogenesis. Furthermore, stevioside also inhibited mouse skin carcinogenesis initiated by peroxynitrite. These results suggest that stevioside and mogroside V might be valuable as chemopreventive agents for chemical carcinogenesis.

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 6 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:168694 CAPLUS

DOCUMENT NUMBER: 137:379713

TITLE: Inhibitory effect of herbal remedies on 12-o-tetradecanoylphorbol-13-acetate-promoted Epstein-Barr virus early antigen activation

AUTHOR(S): Kapadia, Govind J.; Azuine, Magnus A.; Tokuda, Harukuni; Hang, Eric; Mukainaka, T.; Nishino, Hoyoku; Sridhar, Rajagopalan

CORPORATE SOURCE: Laboratory of Natural Drug Products, Department of Pharmaceutical Sciences, School of Pharmacy, Howard University, Washington, DC, 20059, USA

SOURCE: Pharmacological Research (2002), 45(3), 213-220

CODEN: PHMREP; ISSN: 1043-6618

PUBLISHER: Elsevier Science

DOCUMENT TYPE: Journal

LANGUAGE: English

AB For the past several years we have been evaluating natural products as potential cancer chemopreventive agents in a short term in vitro assay involving Epstein-Barr virus early antigen (EBV-EA) activation in Raji cells promoted by phorbol ester, 12-O-tetradecanoylphorbol-13-acetate (TPA). Because of the current interest in the use of herbal remedies, we considered examining them for their cancer chemopreventive activities, using their exts. with a view to uncovering such benefits (if any) these remedies might possess. Thirty-six exts. of 32 herbs belonging to 27 families in use as herbal remedies including those of ginkgo, black cohosh, echinacea, kava-kava, saw palmetto, turmeric, angelica, wild yam, cat's claw, passion flower, muira puama, feverfew, blueberry, chasteberry, licorice, nettle, golden seal, pygeum, ginger, valerian and hops were prepared and evaluated. Turmeric at a concentration of 10 µg ml⁻¹ exhibited the most potent anti-EBV-EA activity, which is ten times more than passionflower, that is next in the order of activity. At the concentration

level

of 100 µg ml⁻¹, several of the herbal remedies tested inhibited the EBV-EA in Raji cells exposed to the tumor promoter TPA (32 pM) by more than 90%. We also report for the first time the activities of 16 new medicinal plants as potential cancer chemopreventive agents. Since inhibitors of EBV-EA promoted by TPA in vitro have been shown to be effective anti-tumor promoting agents in laboratory animal models, our results indicate new and potential applications of these herbal remedies as cancer chemopreventive agents since they are already in clin. use in the human population.

REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 7 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:65577 CAPLUS

DOCUMENT NUMBER: 137:163403

TITLE: Constituents of Compositae plants III. Anti-tumor promoting effects and cytotoxic activity against human cancer cell lines of triterpene diols and triols from edible chrysanthemum flowers

AUTHOR(S): Ukiya, Motohiko; Akihisa, Toshihiro; Tokuda, Harukuni; Suzuki, Hiroyuki; Mukainaka, Teruo; Ichiishi, Eiichiro; Yasukawa, Ken; Kasahara, Yoshimasa; Nishino, Hoyoku

CORPORATE SOURCE: College of Science and Technology, Nihon University, Chiyoda-ku, Tokyo, 101-8308, Japan

SOURCE: Cancer Letters (Shannon, Ireland) (2002), 177(1), 7-12
CODEN: CALEDQ; ISSN: 0304-3835

PUBLISHER: Elsevier Science Ireland Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Fifteen pentacyclic triterpene diols and triols, consisting of: six taraxastanes, faradiol (1), heliantriol B0 (2), heliantriol C (3), 22α-methoxyfaradiol (4), arnidiol (5), and faradiol α-epoxide (6); five oleananes, maniladiol (7), erythrodiol (8), longispinogenin (9), coflodiol (10), and heliantriol A1 (11); two ursanes, brein (12) and uvaol (13); and two lupanes, calenduladiol (14) and heliantriol B2 (15), isolated from the non-saponifiable lipid fraction of the edible flower extract of chrysanthemum (*Chrysanthemum morifolium*) were evaluated for their inhibitory effects on Epstein-Barr virus early antigen (EBV-EA) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate, in Raji cells as a primary screening test for antitumor-promoters. All of the compds. tested showed inhibitory effects against EBV-EA activation with potencies either comparable with or stronger than that of glycyrrhetic acid, a known natural antitumor-promoter. Evaluation of the cytotoxic activity of six compds., 1-3 and 5-7, against human cancer cell lines revealed that compound 5 possesses a wide range of cytotoxicity, with GI50 values (concentration that yields 50% growth) of mostly less than 6 µM.

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 8 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:863496 CAPLUS

DOCUMENT NUMBER: 135:366719

TITLE: Composition for and method of treatment of Kaposi's sarcoma and Kaposi's sarcoma-associated herpesvirus infection using triterpenoids

INVENTOR(S): Flore, Ornella

PATENT ASSIGNEE(S): USA

SOURCE: U.S., 16 pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|----------|
| US 6323183 | B1 | 20011127 | US 1999-324473 | 19990602 |
| US 2002091158 | A1 | 20020711 | US 2001-976838 | 20011015 |

PRIORITY APPLN. INFO.: US 1999-324473 A3 19990602

AB Methods and compns. for treating Kaposi's sarcoma and **Epstein Barr** virus using a a therapeutic derivative of a triterpenoid acid and derivs. thereof are disclosed. The present invention relates to the use of a triterpenoid preferably a **glycyrrhizic acid** (**glycyrrhizin**) to inhibit the transcription of viral latent genes and the consequential viral latent cycle at doses that do not affect the uninfected cells. Using **glycyrrhizic acid** and derivs., the Kaposi's sarcoma-associated herpesvirus (KSHV) infected cells are completely killed six days after treatment.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 9 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:709029 CAPLUS

DOCUMENT NUMBER: 136:95571

TITLE: Anti-tumor promoting effects of multiflorane-type triterpenoids and cytotoxic activity of karounidiol against human cancer cell lines

AUTHOR(S): Akihisa, T.; Tokuda, H.; Ichiishi, E.; Mukainaka, T.; Toriumi, M.; Ukiya, M.; Yasukawa, K.; Nishino, H.

CORPORATE SOURCE: Nihon University, College of Science and Technology, Tokyo, Chiyoda-ku, 101-8308, Japan

SOURCE: Cancer Letters (Shannon, Ireland) (2001), 173(1), 9-14
CODEN: CALEDQ; ISSN: 0304-3835

PUBLISHER: Elsevier Science Ireland Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Forty-nine multiflorane-type triterpenoids consisting of 11 compds. isolated from the seeds of *Trichosanthes kirilowii* (Cucurbitaceae) and 38 of their derivs. have been evaluated for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate in Raji cells as a primary screening test for antitumor promoters. All of the compds. tested showed an inhibitory effect against EBV-EA activation, and among which 43 were revealed to possess remarkable activity with potencies either comparable to or stronger than that of **glycyrrhetic acid**, a known natural antitumor promoter. Their structure-activity relation is discussed. Evaluation of the cytotoxic activity of karounidiol against human cancer cell lines exhibited cytotoxicity especially against a human renal cancer.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 10 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:763541 CAPLUS

DOCUMENT NUMBER: 130:172862

TITLE: Epstein-Barr virus DNA polymerase inhibitors from Chinese herbs: use of preliminary screening, physicochemical properties and taxonomy for new lead compounds generation

AUTHOR(S): Lien, Eric J.; Bui, Huynh-Hoa; Ren, Shijun; Liu, Karin C. S. Chen; Lin, Mei-Tsu; Chiou, Juo-Farn

CORPORATE SOURCE: Department of Pharmaceutical Sciences, School of Pharmacy, University of Southern California, Los Angeles, CA, 90033, USA

SOURCE: Chinese Pharmaceutical Journal (Taipei) (1998), 50(4), 233-247

CODEN: CPHJEP; ISSN: 1016-1015

PUBLISHER: Pharmaceutical Society of Republic of China

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A paradigm of combining preliminary screening data, SAR, functional group and taxonomical analyses has been proposed for new lead compds. generation. Based on the screening data of 38 natural products, a quaternary ammonium derivative (coptisine chloride), a sesquiterpene with an α,β -unsatd. lactone function and an isoflavonoid (daidzein) have been found to be most active. Based on the analyses of overall structures, physicochem. properties and taxonomical relationships, 47 related compds. and six families of plants are suggested for further investigation. Due to the inherent biodiversity, nature may still be the best source for new drug discovery.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 11 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:441846 CAPLUS

DOCUMENT NUMBER: 122:305851

TITLE: Inhibitors of skin-tumor promotion. XIII. Inhibitory effects of euglobals and their related compounds on Epstein-Barr virus activation and on two-stage carcinogenesis of mouse skin tumors. (2)

AUTHOR(S): Takasaki, Midori; Konoshima, Takao; Kozuka, Mutsuo; Yoneyama, Koichi; Yoshida, Shigeo; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio

CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan

SOURCE: Biological & Pharmaceutical Bulletin (1995), 18(2), 288-94

CODEN: BPBLEO; ISSN: 0918-6158

PUBLISHER: Pharmaceutical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB One hundred and fifteen synthesized mono, di, and trihydroxybenzamide and thiobenzamide derivs. having structures related to euglobals were examined for their inhibitory effects on **Epstein-Barr** virus (EBV) activation by 12-O-tetradecanoylphorbol-13-acetate (TPA) as a primary screening test for anti-tumor-promoters. In general, 3-acyl-2,4,6-trihydroxybenzamide and 3-acyl-2,4,6-trihydroxythiobenzamide derivs. exhibited strong or moderate activities, and the latter compds. were less cytotoxic than the former. Meanwhile, little or no activity was observed with mono and dihydroxybenzamide and dihydroxythiobenzamide derivs. Structural requirements for the activities of these compds. have been discussed in detail. Among the above compds., compds. 36 and 73, which were significantly active on the inhibition of EBV activation, were investigated using a two-stage mouse skin carcinogenesis test induced by 7,12-dimethylbenz[a]anthracene (DMBA) and TPA. The results of the in vivo test showed that both compds. have a stronger inhibitory effect than that of the well-known anti-tumor-promoter, **glycyrrhetic** acid. These results suggested that the two compds. might be valuable as anti-tumor-promoters in chemical carcinogenesis.

L1 ANSWER 12 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1994:153711 CAPLUS

DOCUMENT NUMBER: 120:153711

TITLE: Tumor promotion inhibitors containing glycyrrhetic acid monoglucuronide

INVENTOR(S): Kozuka, Mutsuo; Tokuda, Harukuni; Mizutani, Kenji; Tamura, Kokichi; Kuramoto, Takashi

PATENT ASSIGNEE(S): Maruzen Seiyaku Kk, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|----------|
| JP 05306228 | A2 | 19931119 | JP 1992-129884 | 19920424 |
| JP 3163161 | B2 | 20010508 | | |

PRIORITY APPLN. INFO.: JP 1992-129884 19920424

AB Tumor promotion inhibitors contain **glycyrrhetic acid** monoglucuronide (I) or its water-soluble salts as active ingredient. TPA-induced formation of **Epstein-Barr** virus early antigen was inhibited by I [at 1000 (by mol.) to TPA] by 100%, vs. 84.4% by **glycyrrhetic acid**.

L1 ANSWER 13 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1986:454210 CAPLUS

DOCUMENT NUMBER: 105:54210

TITLE: Search for possible anti-tumor promoters by inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced Epstein-Barr virus activation; ursolic acid and oleanolic acid from an anti-inflammatory Chinese medical plant, *Glechoma hederaceae* L

AUTHOR(S): Ohigashi, Hajime; Takamura, Hitoshi; Koshimizu, Koichi; Tokuda, Harukuni; Ito, Yohei

CORPORATE SOURCE: Fac. Agric., Kyoto Univ., Kyoto, 606, Japan

SOURCE: Cancer Letters (Shannon, Ireland) (1986), 30(2), 143-51

CODEN: CALEDQ; ISSN: 0304-3835

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two triterpene carboxylic acids, ursolic acid (UA) [77-52-1] and oleanolic acid (OA) [508-02-1], were isolated from an antiinflammatory Chinese medicinal plant, *G. hederaceae* as inhibitors of 12-O-tetradecanoylphorbol 13-acetate (TPA) [16561-29-8]-induced **Epstein-Barr** virus (EBV) activation in Raji cells. Both acids inhibited activation of the virus at a 1000-fold molar ratio to TPA and also teleocidin B-4 [11032-05-6]. The dose-responses of the acids were very similar to those of the antitumor promoters, retinoic acid and **glycyrrhetic acid** (GA). However, a characteristic property that UA and OA possess, is higher cell viability. Furthermore, enhancement of the inhibitory activity was found in 3-keto derivs. of UA and OA, whereas either loss of the O functionality at C-3 position of UA or oxidation at C-3 of GA led to reduction of the activity. Binding assays suggest that the inhibitory activity appears to be related to the binding of TPA to the receptor in the cells.

L1 ANSWER 14 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1983:401608 CAPLUS

DOCUMENT NUMBER: 99:1608

TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in Epstein-Barr virus early antigen in Raji cells

AUTHOR(S): Okamoto, Hitoshi; Yoshida, Daisuke; Mizusaki, Shigenobu

CORPORATE SOURCE: Cent. Res. Inst., Japan Tob. and Salt Public Corp., Yokohama, 227, Japan

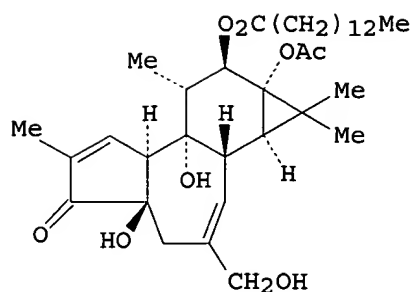
SOURCE: Cancer Letters (Shannon, Ireland) (1983), 19(1), 47-53

CODEN: CALEDQ; ISSN: 0304-3835

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



I

AB Retinol [68-26-8], 5 flavonoids, 3 steroids, and 7 sweetening agents were studied for their effects on TPA (I) [16561-29-8]-induced early antigen (EA) of **Epstein-Barr** virus (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol inhibited EA induction. Among flavonoids, quercetin [117-39-5] resulted in effective inhibition of EA induction by TPA and α -naphthoflavone [604-59-1] showed a weakly inhibitory effect. None of the other flavonoids such as rutin [153-18-4], catechin [154-23-4] and β -naphthoflavone [6051-87-2] affected the induction of EBV-EA by TPA. β -Estradiol [50-28-2] obviously inhibited EBV-EA induction by TPA, but hydrocortisone [50-23-7] did not show any inhibitory effect. **Glycyrrhetic** acid, steviol, phyllostulcin and perrillartine also strongly inhibited EBV-EA induction. **Glycyrrhizin** [1405-86-3] and stevioside [57817-89-7], glycosides of **glycyrrhetic** acid [471-53-4] and steviol [471-80-7], did not inhibit the induction of EBV-EA by TPA. Some of these inhibitors may be effective in inhibiting the in vivo tumor promotion by TPA.

L1 ANSWER 15 OF 24 MEDLINE on STN
 ACCESSION NUMBER: 2005305760 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 15914009
 TITLE: Cancer preventive agents, Part 2: Synthesis and evaluation of 2-phenyl-4-quinolone and 9-oxo-9,10-dihydroacridine derivatives as novel antitumor promoters.
 AUTHOR: Nakamura Seikou; Kozuka Mutsuo; Bastow Kenneth F; Tokuda Harukuni; Nishino Hoyoku; Suzuki Madoka; Tatsuzaki Jin; Morris Natschke Susan L; Kuo Sheng-Chu; Lee Kuo-Hsiung
 CORPORATE SOURCE: Natural Products Laboratory, School of Pharmacy, University of North Carolina, Chapel Hill, NC 27599, USA.
 CONTRACT NUMBER: CA 17625 (NCI)
 SOURCE: Bioorganic & medicinal chemistry, (2005 Jul 15) Vol. 13, No. 14, pp. 4396-401.
 Journal code: 9413298. ISSN: 0968-0896.
 PUB. COUNTRY: England: United Kingdom
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200510
 ENTRY DATE: Entered STN: 20050615
 Last Updated on STN: 20051012
 Entered Medline: 20051011

AB 2-Phenyl-4-quinolone and 9-oxo-9,10-dihydroacridine derivatives were synthesized and screened as potential antitumor promoters by examining the ability of the compounds to inhibit **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells. Interestingly, compounds 14, 15, and 17 showed similar inhibitory effects (89-92%, 66-69%, and 24-29% at 1000, 500, and 100 mol ratio to TPA, respectively) against EBV-EA with potencies comparable to those of **glycyrrhetic** acid, a known natural antitumor-promoter.

L1 ANSWER 16 OF 24 MEDLINE on STN

ACCESSION NUMBER: 2003306618 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12834859
TITLE: Mechanism of action of glycyrrhizic acid in inhibition of Epstein-Barr virus replication in vitro.
AUTHOR: Lin Jung Chung
CORPORATE SOURCE: Department of Microbiology, College of Medicine, Tzu Chi University, 701 Section 3, Chung Yang Road, Hualien 970, Taiwan ROC.. jx18@mail.tcu.edu.tw
SOURCE: Antiviral research, (2003 Jun) Vol. 59, No. 1, pp. 41-7. Journal code: 8109699. ISSN: 0166-3542.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200310
ENTRY DATE: Entered STN: 20030702
Last Updated on STN: 20031024
Entered Medline: 20031023

AB We report here that glycyrrhizic acid (GL), a component of licorice root (Glycyrrhiza radix), is active against EBV replication in superinfected Raji cells in a dose-dependent fashion. The IC(50) values for viral inhibition and cell growth were 0.04 and 4.8mM, respectively. The selectivity index (ratio of IC(50) for cell growth to IC(50) for viral DNA synthesis) was 120. Time of addition experiments suggested that GL interferes with an early step of EBV replication cycle (possibly penetration). GL had no effect on viral adsorption, nor did it inactivate EBV particles. Thus, GL represents a new class of anti-EBV compounds with a mode of action different from that of the nucleoside analogs that inhibit viral DNA polymerase.

L1 ANSWER 17 OF 24 MEDLINE on STN

ACCESSION NUMBER: 2003128681 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12608850
TITLE: Polyprenylated benzophenones from Garcinia assigu and their potential cancer chemopreventive activities.
AUTHOR: Ito Chihiro; Itoigawa Masataka; Miyamoto Yoshiaki; Onoda Saori; Rao K Sundar; Mukainaka Teruo; Tokuda Harukuni; Nishino Hoyoku; Furukawa Hiroshi
CORPORATE SOURCE: Faculty of Pharmacy, Meijo University, Tempaku, Nagoya 468-8503, Japan.. itoigawa@tokaigakuen-u.ac.jp
CONTRACT NUMBER: CA 17625 (NCI)
SOURCE: Journal of natural products, (2003 Feb) Vol. 66, No. 2, pp. 206-9. Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200307
ENTRY DATE: Entered STN: 20030320
Last Updated on STN: 20030708
Entered Medline: 20030707

AB In a further study on the chemical constituents of Garcinia assigu, two new benzophenones corresponding to the 13-O-methyl ethers (1 and 2) of the known isogarcinol and garcinol, respectively, were isolated and characterized, along with known benzophenones (3-6). Inhibitory effects of the benzophenones isolated from this plant on Epstein-Barr virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells and their radical-scavenging ability against 1,1-diphenyl-2-picrylhydrazyl (DPPH) were demonstrated. The cyclized polyprenylbenzophenones (1-5) showed comparable or stronger potential cancer chemopreventive activity when

compared to **glycyrrhetic** acid, a known anti-tumor promoter.

L1 ANSWER 18 OF 24 MEDLINE on STN

ACCESSION NUMBER: 2002233297 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11809525
TITLE: Constituents of Compositae plants III. Anti-tumor promoting effects and cytotoxic activity against human cancer cell lines of triterpene diols and triols from edible chrysanthemum flowers.
AUTHOR: Ukiya Motohiko; Akihisa Toshihiro; Tokuda Harukuni; Suzuki Hiroyuki; Mukainaka Teruo; Ichiishi Eiichiro; Yasukawa Ken; Kasahara Yoshimasa; Nishino Hoyoku
CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8308, Japan.
SOURCE: Cancer letters, (2002 Mar 8) Vol. 177, No. 1, pp. 7-12. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200205
ENTRY DATE: Entered STN: 20020425
Last Updated on STN: 20020516
Entered Medline: 20020515

AB Fifteen pentacyclic triterpene diols and triols, consisting of: six taraxastanes, faradiol (1), heliantriol B0 (2), heliantriol C (3), 22alpha-methoxyfaradiol (4), arnidiol (5), and faradiol alpha-epoxide (6); five oleananes, maniladiol (7), erythrodiol (8), longispinogenin (9), cofilodiol (10), and heliantriol A(1) (11); two ursanes, brein (12) and uvaol (13); and two lupanes, calenduladiol (14) and heliantriol B2 (15), isolated from the non-saponifiable lipid fraction of the edible flower extract of chrysanthemum (*Chrysanthemum morifolium*) were evaluated for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate, in Raji cells as a primary screening test for anti-tumor-promoters. All of the compounds tested showed inhibitory effects against EBV-EA activation with potencies either comparable with or stronger than that of **glycyrrhetic** acid, a known natural anti-tumor-promoter. Evaluation of the cytotoxic activity of six compounds, 1-3 and 5-7, against human cancer cell lines revealed that compound 5 possesses a wide range of cytotoxicity, with GI50 values (concentration that yields 50% growth) of mostly less than 6 microM.

L1 ANSWER 19 OF 24 MEDLINE on STN

ACCESSION NUMBER: 2001532135 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11578803
TITLE: Anti-tumor promoting effects of multiflorane-type triterpenoids and cytotoxic activity of karounidiol against human cancer cell lines.
AUTHOR: Akihisa T; Tokuda H; Ichiishi E; Mukainaka T; Toriumi M; Ukiya M; Yasukawa K; Nishino H
CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8308, Japan.. akihisa@chem.cst.nihon-u.ac.jp
SOURCE: Cancer letters, (2001 Nov 8) Vol. 173, No. 1, pp. 9-14. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200112
ENTRY DATE: Entered STN: 20011002
Last Updated on STN: 20020122
Entered Medline: 20011204

AB Forty-nine multiflorane-type triterpenoids consisting of 11 compounds isolated from the seeds of *Trichosanthes kirilowii* (Cucurbitaceae) and 38 of their derivatives have been evaluated for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate in Raji cells as a primary screening test for anti-tumor promoters. All of the compounds tested showed an inhibitory effect against EBV-EA activation, and among which 43 were revealed to possess remarkable activity with potencies either comparable to or stronger than that of **glycyrrhetic** acid, a known natural anti-tumor promoter. Their structure-activity relationship is discussed. Evaluation of the cytotoxic activity of karounidiol (27) against human cancer cell lines exhibited cytotoxicity especially against a human renal cancer.

L1 ANSWER 20 OF 24 MEDLINE on STN
ACCESSION NUMBER: 95261351 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7742800
TITLE: Inhibitors of skin-tumor promotion. XIII. Inhibitory effects of euglobals and their related compounds on Epstein-Barr virus activation and on two-stage carcinogenesis of mouse skin tumors. (2).
AUTHOR: Takasaki M; Konoshima T; Kozuka M; Yoneyama K; Yoshida S; Tokuda H; Nishino H; Iwashima A
CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, Japan.
SOURCE: Biological & pharmaceutical bulletin, (1995 Feb) Vol. 18, No. 2, pp. 288-94.
Journal code: 9311984. ISSN: 0918-6158.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199506
ENTRY DATE: Entered STN: 19950621
Last Updated on STN: 19950621
Entered Medline: 19950615

AB One hundred and fifteen synthesized mono, di, and trihydroxybenzamide and thiobenzamide derivatives having structures related to euglobals were examined for their inhibitory effects on **Epstein-Barr** virus (EBV) activation by 12-O-tetradecanoylphorbol-13-acetate (TPA) as a primary screening test for anti-tumor-promoters. In general, 3-acyl-2,4,6-trihydroxybenzamide and 3-acyl-2,4,6-trihydroxythiobenzamide derivatives exhibited strong or moderate activities, and the latter compounds were less cytotoxic than the former. Meanwhile, little or no activity was observed with mono and dihydroxybenzamide and dihydroxythiobenzamide derivatives. Structural requirements for the activities of these compounds have been discussed in detail. Among the above compounds, compounds 36 and 73, which were significantly active on the inhibition of EBV activation, were investigated using a two-stage mouse skin carcinogenesis test induced by 7,12-dimethylbenz[a]anthracene (DMBA) and TPA. The results of the in vivo test showed that both compounds have a stronger inhibitory effect than that of the well-known anti-tumor-promoter, **glycyrrhetic** acid. These results suggested that the two compounds might be valuable as anti-tumor-promoters in chemical carcinogenesis.

L1 ANSWER 21 OF 24 MEDLINE on STN
ACCESSION NUMBER: 93381131 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8370836
TITLE: Repeat MRI in acute rhabdomyolysis: correlation with clinicopathological findings.
AUTHOR: Shintani S; Shiigai T
CORPORATE SOURCE: Department of Neurology, Toride Kyodo General Hospital, Ibaraki, Japan.
SOURCE: Journal of computer assisted tomography, (1993 Sep-Oct)

Vol. 17, No. 5, pp. 786-91.
Journal code: 7703942. ISSN: 0363-8715.

PUB. COUNTRY: United States
DOCUMENT TYPE: (CASE REPORTS)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199310
ENTRY DATE: Entered STN: 19931029
Last Updated on STN: 19931029
Entered Medline: 19931012

AB OBJECTIVE: Four cases of acute rhabdomyolysis are presented and the correlation between clinicopathological and MR findings is discussed. MATERIALS AND METHODS: The cases include carnitine palmitoyltransferase I deficiency presenting as compartment syndrome, acute polymyositis, acute myositis associated with **Epstein-Barr** virus infection, and **glycyrrhizin**- and diuretic-induced hypokalemic myopathy. RESULTS: The T2-weighted MR images revealed high intensity lesions in the affected muscle groups. The lesions seen on MR correlated precisely with the symptoms and neurological deficits of the patients. Repeat MR studies showed that the high intensity lesions seen on T2-weighted MR images resolved in parallel with the clinical course. CONCLUSION: This reversibility of the MR findings suggests that the high intensity lesions do not reflect permanent myopathic changes, but probably represent transient edema in the acute phase of rhabdomyolysis.

L1 ANSWER 22 OF 24 MEDLINE on STN

ACCESSION NUMBER: 86161439 MEDLINE

DOCUMENT NUMBER: PubMed ID: 3006912

TITLE: Search for possible antitumor promoters by inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced Epstein-Barr virus activation; ursolic acid and oleanolic acid from an anti-inflammatory Chinese medicinal plant, *Glechoma hederaceae* L.

AUTHOR: Ohigashi H; Takamura H; Koshimizu K; Tokuda H; Ito Y

SOURCE: Cancer letters, (1986 Feb) Vol. 30, No. 2, pp. 143-51.
Journal code: 7600053. ISSN: 0304-3835.

PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198605
ENTRY DATE: Entered STN: 19900321
Last Updated on STN: 19900321
Entered Medline: 19860508

AB From an anti-inflammatory Chinese medicinal plant, *Glechoma hederaceae* L., two triterpene carboxylic acids, ursolic acid (UA) and oleanolic acid (OA) have been isolated as inhibitors of 12-O-tetradecanoylphorbol-13-acetate (TPA) induced **Epstein-Barr** virus (EBV) activation in Raji cells. Both acids significantly inhibited the activation at a 1000-fold molar ratio to TPA, and also teleocidin B-4. The dose responses of the acids were very similar to those of the antitumor promoters, retinoic acid (RA) and **glycyrrhetic** acid (GA). However, a characteristic property that UA and OA possess, far higher cell viability to the Raji cells than RA to the Raji cells, has been pointed out. Furthermore, enhancement of the inhibitory activity was found in 3-keto derivatives of UA and OA, while either loss of oxygen functionality at C-3 position of UA or oxidation at C-3 of GA led to reduction of the activity. Binding assay suggested that the inhibitory activity should be exhibited by some event caused after binding of TPA to the receptor in the cells.

L1 ANSWER 23 OF 24 MEDLINE on STN

ACCESSION NUMBER: 84055021 MEDLINE

DOCUMENT NUMBER: PubMed ID: 6315213

TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced ornithine decarboxylase activity in mouse epidermis by sweetening agents and related compounds.
AUTHOR: Okamoto H; Yoshida D; Saito Y; Mizusaki S
SOURCE: Cancer letters, (1983 Nov) Vol. 21, No. 1, pp. 29-35.
Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198401
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19900319
Entered Medline: 19840107

AB The effects of naturally occurring sweetening agents, which inhibited the induction of **Epstein-Barr** virus-associated early antigen (EBV-EA) induced by 12-O-tetradecanoylphorbol-13-acetate (TPA), and related compounds on the induction of ornithine decarboxylase (ODC) by TPA is examined. Application of **glycyrrhetic acid** or steviol to mouse skin 1 h before TPA treatment showed a remarkable decrease in TPA-induced ODC activity. Post-treatment with **glycyrrhetic acid** or steviol 1 h after application of TPA also resulted in a considerable depression in the induction of ODC activity. Neither **glycyrrhetic acid** nor steviol alone induced epidermal ODC activity. These results suggest that **glycyrrhetic acid** and steviol interfere with the process of induction of epidermal ODC by TPA treatment of mouse skin. *cis*-Abienol, frullanolide and norambreinolide, which have a partially similar structure in the moiety with **glycyrrhetic acid** or steviol, were tested. *cis*-Abienol and frullanolide showed an inhibitory effect when applied 1 h before TPA treatment, but norambreinolide was not effective. A relationship between suppression of ODC activity and inhibition of EBV-EA induction is discussed.

L1 ANSWER 24 OF 24 MEDLINE on STN

ACCESSION NUMBER: 83206473 MEDLINE

DOCUMENT NUMBER: PubMed ID: 6850568

TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in Epstein-Barr virus early antigen in Raji cells.

AUTHOR: Okamoto H; Yoshida D; Mizusaki S

SOURCE: Cancer letters, (1983 May) Vol. 19, No. 1, pp. 47-53.
Journal code: 7600053. ISSN: 0304-3835.

PUB. COUNTRY: Netherlands

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 198307

ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19990129
Entered Medline: 19830729

AB Retinol, 5 flavonoids, 3 steroids and 7 sweetening agents were studied for their effects on 12-O-tetradecanoylphorbol-13-acetate (TPA)-induced early antigen (EA) of **Epstein-Barr** virus (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol showed inhibition of EA induction. Among flavonoids, quercetin resulted in effective inhibition of EA induction by TPA and alpha-naphthoflavone showed the weakly inhibitory effect. None of the other flavonoids such as rutin, catechin and beta-naphthoflavone affected the induction of EBV-EA by TPA. beta-Estradiol obviously inhibited EBV-EA induction by TPA, but hydrocortisone did not show any inhibitory effect on it. **Glycyrrhetic acid**, steviol, phyllodulcin and perrillartine also showed the remarkable inhibition of EBV-EA induction. On the other hand, **glycyrrhizin** and stevioside, glycosides of **glycyrrhetic acid**

acid and steviol, did not inhibit the induction of EBV-EA by TPA. Some of the inhibitors reported here may be effective on the inhibition of the in vivo tumor promotion by TPA.

L2 ANSWER 60 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1986:63422 CAPLUS

DOCUMENT NUMBER: 104:63422

TITLE: Epstein-Barr virus-activating and tumor-promoting natural products: their possible role in causation of Burkitt's lymphoma and nasopharyngeal carcinoma

AUTHOR(S): Ito, Yohei; Tokuda, Harukuni; Ohigashi, Hajime; Koshimizu, Koichi

CORPORATE SOURCE: Fac. Med., Kyoto Univ., Kyoto, 606, Japan

SOURCE: International Congress Series (1985), 667 (Herpes Viruses Virus Chemother.), 179-84
CODEN: EXMDA4; ISSN: 0531-5131

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review with 15 refs. on the possibility that diterpene esters from plants, indole alkaloids from soil microbes, and other environmental factors are responsible for the frequent occurrence of 2 Epstein-Barr virus (EBV)-associated diseases, i.e., Burkitt's lymphoma and nasopharyngeal carcinoma, in southern provinces of China. An assay method based on the synergistic induction of EBV early antigen formation in human Raji cells as an indication of carcinogenic potential of naturally occurring compds. in the area where the 2 diseases are endemic was proposed.

L2 ANSWER 61 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1986:16351 CAPLUS

DOCUMENT NUMBER: 104:16351

TITLE: Structure-activity relationship in the induction of Epstein-Barr virus by teleocidin derivatives

AUTHOR(S): Irie, Kazuhiro; Tokuda, Harukuni; Hagiwara, Nobuyuki; Koshimizu, Koichi; Hayashi, Hideo; Murao, Sawao; Ito, Yohei

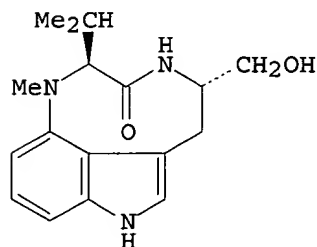
CORPORATE SOURCE: Fac. Agric., Kyoto Univ., Kyoto, 606, Japan

SOURCE: International Journal of Cancer (1985), 36(4), 485-8
CODEN: IJCNAW; ISSN: 0020-7136

DOCUMENT TYPE: Journal

LANGUAGE: English

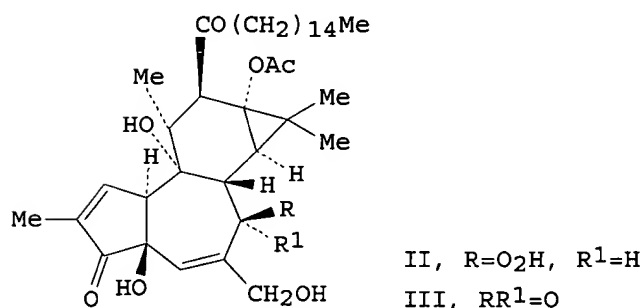
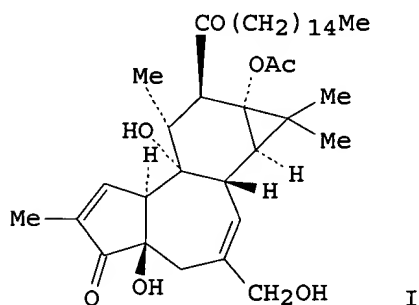
GI



AB (-)-Indolactam V (I) [90365-57-4] and derivs. of I, which have the basic ring-structure of teleocidins without the **monoterpenoid** moiety, were studied for their **Epstein-Barr** virus early antigen (EBV-EA)-induced activity. (-)-14-O-Alkyl indolactam Vs showed little induction of EBV-EA, whereas (-)-14-dehydroxyindolactam V and (-)-14-chloroindolactam V [99423-87-7] proved to be potent EBV-EA inducers, though their activities (EC50) were approx. 10 times weaker than that of I. These results indicate that the hydroxyl group at C-14 is not indispensable for EBV-EA induction and can be replaced. The activities (EC50) of (-)-1-N-Me [99414-59-2], (-)-1-N-Et [99414-60-5], and

(-)-1-N-Bu indolactam V [99442-64-5] were .apprx.5 times weaker than that of I whereas (-)-1-N-hexyl [99414-61-6] and (-)-1-N-octyl indolactam V [99414-62-7] were even less active, suggesting that the free imino group of the indole ring in I plays an important role in the activity, and that the activity cannot be enhanced by alkylation at the N-1 position of I.

L2 ANSWER 62 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1983:517577 CAPLUS
 DOCUMENT NUMBER: 99:117577
 TITLE: Tiglane type diterpene-esters with Epstein-Barr virus-inducing activity from *Sapium sebiferum*
 AUTHOR(S): Ohigashi, Hajime; Ohtsuka, Takanao; Hirota, Mitsuru; Koshimizu, Koichi; Tokuda, Harukuni; Ito, Yohei
 CORPORATE SOURCE: Dep. Food Sci. Technol., Kyoto Univ., Kyoto, 606, Japan
 SOURCE: Agricultural and Biological Chemistry (1983), 47(7), 1617-22
 CODEN: ABCHA6; ISSN: 0002-1369
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



AB Three Epstein-Barr virus activating principles were isolated from the leaves of *S. sebiferum*. By chemical and spectroscopic evidence they were identified as tiglane type diterpene esters with structures of (I) [87084-56-8], (II) [87084-57-9], and (III) [87084-58-0]. I and II strongly induced an early antigen of the virus in a Raji cell, whereas III did so weakly. The activity of some derivs. of II are also discussed.

L2 ANSWER 63 OF 100 MEDLINE on STN
 ACCESSION NUMBER: 2005042922 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 15670948
 TITLE: Cancer preventive agents. Part 1: chemopreventive potential of cimigenol, cimigenol-3,15-dione, and related compounds.
 AUTHOR: Sakurai Nobuko; Kozuka Mutsuo; Tokuda Harukuni; Mukainaka

Teruo; Enjo Fumio; Nishino Hoyoku; Nagai Masahiro; Sakurai
 Yojiro; Lee Kuo-Hsiung
 CORPORATE SOURCE: Natural Products Laboratory, School of Pharmacy, University
 of North Carolina, Chapel Hill, NC 27599-7360, USA.
 CONTRACT NUMBER: CA 17625 (NCI)
 SOURCE: Bioorganic & medicinal chemistry, (2005 Feb 15) Vol. 13,
 No. 4, pp. 1403-8.
 Journal code: 9413298. ISSN: 0968-0896.
 PUB. COUNTRY: England: United Kingdom
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200508
 ENTRY DATE: Entered STN: 20050127
 Last Updated on STN: 20050803
 Entered Medline: 20050802

AB In continuation of our previous report, cimigenol (1) and 15 related
 compounds were screened as potential antitumor promoters by using the in
 vitro short-term 12-O-tetradecanoylphorbol-13-acetate (TPA)--induced
Epstein-Barr virus early antigen (EBV-EA) activation
 assay. Cimigenol-3,15-dione (2) displayed the greatest potency (100%
 inhibition at 1000 mol ratio/TPA) and consequently was further examined
 for antitumor-promoting activity in a two-stage carcinogenesis assay of
 mouse skin tumors (DMBA/TPA). In this assay, compound 2 showed
 significant activity, reducing the number of papillomas per mouse to 48%
 of the control group at 20 weeks. In addition, compounds 1 and 2 were
 examined for antitumor-initiating activity in a two-stage carcinogenesis
 assay of mouse skin tumors induced by peroxydinitrite as an initiator and
 TPA as a promoter. Results showed that these two **triterpenoids**
 were almost equipotent with epigallocatechin gallate (EGCG) and slightly
 more potent than tocicol (group V), the positive controls. Thus,
 compounds 1 and 2 exhibited not only strong antitumor-promoting activity
 but also significant antitumor-initiating effect on mouse skin. These
 data suggest that both compounds might be valuable chemopreventors.

L2 ANSWER 64 OF 100 MEDLINE on STN
 ACCESSION NUMBER: 2005017579 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 15643564
 TITLE: Potential anti-tumor promoting activity of lupane-type
 triterpenoids from the stem bark of *Glochidion zeylanicum*
 and *Phyllanthus flexuosus*.
 AUTHOR: Tanaka Reiko; Kinouchi Yoshitaka; Wada Shun-ichi; Tokuda
 Harukuni
 CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of
 Pharmaceutical Sciences, Osaka, Japan..
 tanakar@gly.oups.ac.jp
 SOURCE: Planta medica, (2004 Dec) Vol. 70, No. 12, pp. 1234-6.
 Journal code: 0066751. ISSN: 0032-0943.
 PUB. COUNTRY: Germany: Germany, Federal Republic of
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200503
 ENTRY DATE: Entered STN: 20050112
 Last Updated on STN: 20050331
 Entered Medline: 20050330

AB Four known lupane-type **triterpenoids**, glochidonol (1),
 glochidiol (2), lup-20(29)-ene-1beta,3beta-diol (3) and glochidone (3)
 were isolated from the stem bark of *Glochidion zeylanicum*. Previously,
 lupeol (5), lup-20(29)-ene-3beta,24-diol (6) and betulin (7) were isolated
 from the stem bark of *Phyllanthus flexuosus*. This study reports the
 assays of these lupane-type **triterpenoids**: all isolates 1-7 and
 synthetic analogues, glochidonyl acetate (1a), lup-20(29)-ene-1,3-dione
 (1b) and lup-20(29)-ene 3beta,24-diacetate (6a) were tested for their

inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol 13-acetate (TPA). Among them, the effects of compounds 2 (IC₅₀ = 290 mol ratio/32 pmol TPA) and 3 (IC₅₀ = 300) were stronger than the others. In addition, compound 2 exhibited a strong inhibitory effect on mouse skin tumor promotion in an in vivo mouse two-stage carcinogenesis test.

L2 ANSWER 65 OF 100 MEDLINE on STN
 ACCESSION NUMBER: 2004528924 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 15503357
 TITLE: A new seco-abietane-type diterpene from the stem bark of *Picea glehnii*.
 AUTHOR: Tanaka Reiko; Wada Shun-ichi; Kinouchi Yoshitaka; Tokuda Harukuni; Matsunaga Shunyo
 SOURCE: *Planta medica*, (2004 Sep) Vol. 70, No. 9, pp. 877-80.
 Journal code: 0066751. ISSN: 0032-0943.
 PUB. COUNTRY: Germany: Germany, Federal Republic of
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200412
 ENTRY DATE: Entered STN: 20041026
 Last Updated on STN: 20041220
 Entered Medline: 20041210

AB A new seco-abietane-type **diterpenoid**, 13S-hydroxy-9-oxo-9,10-seco-abiet-8(14)-en-18,10alpha-olide (1) along with a known lignan compound, pinoresinol (2) was isolated from the stem bark of *Picea glehnii* (Fr. Schm.) Masters. Spectroscopic methods and chemical conversions were used to establish the structure of 1. In order to assess their cancer chemopreventive potential, the inhibition of **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol 13-acetate (TPA) was examined for compound 1, its synthetic analogue, 9,10-seco-8S,13S-epoxy-abiet-8(14)-en-18,10alpha-olide (1a) and 2. The inhibitory effect of 1a on EBV-EA induction was strong (0, 20.7, 67.1 and 89.2 % inhibition at 1000, 500, 100 and 10 mol ratio/TPA). The IC₅₀ of 1a was 226 mol ratio/32 pmol/TPA.

L2 ANSWER 66 OF 100 MEDLINE on STN
 ACCESSION NUMBER: 2004455415 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 15363540
 TITLE: Cancer chemopreventive activity of 3beta-methoxyserrat-14-en-21beta-ol and several serratane analogs on two-stage mouse skin carcinogenesis.
 AUTHOR: Tanaka Reiko; Shanmugasundaram Kandasamy; Yamaguchi Chiharu; Ishikawa Yohei; Tokuda Harukuni; Nishide Kiyoharu; Node Manabu
 CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, 4-20-1 Nasahara, Takatsuki, Osaka 569-1094, Japan.. tanakar@gly.oups.ac.jp
 SOURCE: *Cancer letters*, (2004 Oct 28) Vol. 214, No. 2, pp. 149-56.
 Journal code: 7600053. ISSN: 0304-3835.
 PUB. COUNTRY: Ireland
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200411
 ENTRY DATE: Entered STN: 20040915
 Last Updated on STN: 20041110
 Entered Medline: 20041109

AB 3beta-Methoxyserrat-14-en-21beta-ol (1) and 3alpha-methoxyserrat-14-en-21beta-ol (2) are the most abundant **triterpenoids** from two *Picea* plants, *Picea jezoensis* (Sieb. et Zucc.) Carr. var. *jezoensis* and *P. jezoensis* (Sieb. et Zucc.) Carr. *hondoensis* (Mayr) Rehder, and the total yield of 1 and 2 reach over 1/3 of the chloroform extract of the above two

plants. This study deals with the potential of anti-tumor promoting activity of 1 and results of the assay of 22 synthetic serratane-type **triterpenoids** (6)-(27) derived from 1, 2, 21-episerratenediol (3), diepiserratenediol (4) and 13 α ,14 α -epoxy-3 β -methoxyserratane-21 β -ol (5) to discuss the structure-activity relationship. As a preliminary evaluation of their potential to inhibit tumor promotion, the inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA) were used. All compounds except for 12 and 19 showed potent inhibitory effects on EBV-EA induction (100% inhibition at 1000 mol ratio/TPA), their effects being stronger than that of a positive control oleanolic acid. Compounds 1, 13, 14, 18, 20 and 26 were selected to examine the effect on the in vivo two-stage mouse skin carcinogenesis test induced by 7,12-dimethylbenz[a]anthracene (DMBA) as an initiator and TPA as a promoter. The most abundant **triterpenoid** 1 and the synthetic compounds 13 and 14 were found to exhibit the excellent anti-tumor promoting activity in the in vivo carcinogenesis test, and compounds 18, 20 and 26 also showed strong inhibitory effects.

L2 ANSWER 67 OF 100 MEDLINE on STN

ACCESSION NUMBER: 2004183857 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15043419
TITLE: Microbial transformation of isosteviol and inhibitory effects on Epstein-Barr virus activation of the transformation products.
AUTHOR: Akihisa Toshihiro; Hamasaki Yusuke; Tokuda Harukuni; Ukiya Motohiko; Kimura Yumiko; Nishino Hoyoku
CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugdai, Chiyoda-ku, Tokyo 101-8308, Japan..
akihisa@chem.cst.nihon-u.ac.jp
CONTRACT NUMBER: CA 177625 (NCI)
SOURCE: Journal of natural products, (2004 Mar) Vol. 67, No. 3, pp. 407-10.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200405
ENTRY DATE: Entered STN: 20040415
Last Updated on STN: 20040515
Entered Medline: 20040514

AB Microbial transformation of isosteviol (2), a beyerane-type **diterpenoid** obtained from stevioside (1) by acid hydrolysis, yielded 7 β -hydroxyisosteviol (3), 11 β -hydroxyisosteviol (5), and 12 β -hydroxyisosteviol (6) by the fungus *Aspergillus niger*, 17-hydroxyisosteviol (7) by the fungus *Glomerella cingulata*, and 3 and 7-oxoisosteviol (4) by the fungus *Mortierella elongate*. The five metabolites, 3-7, along with 1 and 2 were evaluated for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells as a primary screening test for inhibitors of tumor promoters. All the diterpenes tested showed potent inhibitory effects, with the five metabolites 3-7 exhibiting more potent effects.

L2 ANSWER 68 OF 100 MEDLINE on STN

ACCESSION NUMBER: 2004035351 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14735444
TITLE: Two new anti-tumor promoting serratane-type triterpenoids from the stem bark of *Picea jezoensis* var. *jezoensis*.
AUTHOR: Tanaka Reiko; Ishikawa Yohei; Minami Toshifumi; Minoura Katsuhiko; Tokuda Harukuni; Matsunaga Shunyo
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Osaka, Japan..

tanakar@gly.oups.ac.jp
SOURCE: Planta medica, (2003 Nov) Vol. 69, No. 11, pp. 1041-7.
Journal code: 0066751. ISSN: 0032-0943.
PUB. COUNTRY: Germany; Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200402
ENTRY DATE: Entered STN: 20040122
Last Updated on STN: 20040211
Entered Medline: 20040210

AB Two new serratane-type **triterpenoids**, 1 and 2, were isolated from the stem bark of *Picea jezoensis* Carr. var. *jezoensis* (Pinaceae). Their structures were determined to be 3beta-methoxyserrat-13-en-21beta-ol (1) and 13beta, 14beta-epoxy-3beta-methoxyserratan-21beta-ol (2) on the basis of spectroscopic methods and partial syntheses. Compounds 1 and 2 and their acetates were screened as potential anti-tumor promoters by using the in vitro short-term 12-O-tetradecanoylphorbol 13-acetate (TPA)-induced **Epstein-Barr** virus early antigen (EBV-EA) activation assay. IC50 value evaluation showed that compound 1 was more effective than others. In addition, compounds 1 and 2 were examined for anti-tumor promoting activities in a two-stage carcinogenesis assay of mouse skin tumors induced by 7,12-dimethylbenz[a]anthracene (DMBA) as an initiator and TPA as a promoter. Compounds 1 and 2 exhibited significant anti-tumor promoting effects on mouse skin carcinogenesis.

L2 ANSWER 69 OF 100 MEDLINE on STN

ACCESSION NUMBER: 2004024116 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14695801
TITLE: Lucidenic acids P and Q, methyl lucidenate P, and other **triterpenoids** from the fungus *Ganoderma lucidum* and their inhibitory effects on **Epstein-Barr** virus activation.
AUTHOR: Iwatsuki Kenji; Akihisa Toshihiro; Tokuda Harukuni; Ukiya Motohiko; Oshikubo Manabu; Kimura Yumiko; Asano Takeshi; Nomura Atsushi; Nishino Hoyoku
CORPORATE SOURCE: K-Laboratories for Intelligent Medical Remote Services, 2266-22 Anagahora, Shimoshidami, Moriyama-ku, Nagoya 463-0003, Japan.
CONTRACT NUMBER: CA177625 (NCI)
SOURCE: Journal of natural products, (2003 Dec) Vol. 66, No. 12, pp. 1582-5.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200403
ENTRY DATE: Entered STN: 20040116
Last Updated on STN: 20040326
Entered Medline: 20040325

AB A new triterpene acid, lucidenic acid P (1a), and two new triterpene acid methyl esters, methyl lucidenates P (1b) and Q (2b), were isolated and characterized from the fruiting body of the fungus *Ganoderma lucidum*. Their structures were elucidated on the basis of spectroscopic methods. In addition, eight known triterpene acids, lucidenic acids A (3a), C (4a), D(2) (5a), E(2) (6a), and F (7a) and ganoderic acids E (9a), F (10a), and T-Q (11a), and six known triterpene acid methyl esters, methyl lucidenates A (3b), D(2) (5b), E(2) (6b), F (7b), and L (8b) and methyl ganoderate F (10b), were isolated and identified from the fungus. All of the **triterpenoids**, with the exception of 7a, were evaluated with respect to their inhibitory effects on the induction of **Epstein-Barr** virus early antigen (EBV-EA) by 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells, which is known to be a primary screening test

for antitumor promoters. All of the compounds tested showed potent inhibitory effects on EBV-EA induction (96-100% inhibition at 1×10^3 mol ratio/TPA).

L2 ANSWER 70 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2004012278 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14709887
TITLE: 3-epicabraleahydroxylactone and other **triterpenoids** from camellia oil and their inhibitory effects on **Epstein-Barr** virus activation.
AUTHOR: Akihisa Toshihiro; Tokuda Harukuni; Ukiya Motohiko; Suzuki Toshie; Enjo Fumio; Koike Kazuo; Nikaido Tamotsu; Nishino Hoyoku
CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8308, Japan..
akihisa@chem.cst.nihon-u.ac.jp
CONTRACT NUMBER: CA 17625 (NCI)
SOURCE: Chemical & pharmaceutical bulletin, (2004 Jan) Vol. 52, No. 1, pp. 153-6.
Journal code: 0377775. ISSN: 0009-2363.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200408
ENTRY DATE: Entered STN: 20040108
Last Updated on STN: 20040814
Entered Medline: 20040813
AB The structure of a **triterpenoid** isolated from the nonsaponifiable lipid (NSL) of the seed oil of the camellia (*Camellia japonica* L.; Theaceae) was established to be (20S)-3beta-hydroxy-25,26,27-trisnordammaran-24,20-olide (1; 3-epicabraleahydroxylactone) on the basis of spectroscopic and chemical methods. Six other **triterpenoids** isolated from the NSL were identified as 3-epicabraleadiol (2), ocotillol II (3), ocotillol I (4), dammarenediol II (5), (20R)-taraxastane-3beta,20-diol (6), and lupane-3beta,20-diol (7). Upon evaluation of the seven **triterpenoids** (1-7) with respect to their inhibitory effects on the induction of **Epstein-Barr** virus early antigen (EBV-EA) by 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells, three compounds (5-7) showed potent inhibitory effects against EBV-EA induction (IC(50) values of 277-420 mol ratio/32 pmol TPA).

L2 ANSWER 71 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2003590384 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14640522
TITLE: Sunpollenol and five other rearranged 3,4-seco-tirucallane-type **triterpenoids** from sunflower pollen and their inhibitory effects on **Epstein-Barr** virus activation.
AUTHOR: Ukiya Motohiko; Akihisa Toshihiro; Tokuda Harukuni; Koike Kazuo; Kimura Yumiko; Asano Takeshi; Motohashi Shigeyasu; Nikaido Tamotsu; Nishino Hoyoku
CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8308, Japan.
CONTRACT NUMBER: CA 17625 (NCI)
SOURCE: Journal of natural products, (2003 Nov) Vol. 66, No. 11, pp. 1476-9.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200403
ENTRY DATE: Entered STN: 20031216

Last Updated on STN: 20040312

Entered Medline: 20040311

AB Six new rearranged 3,4-seco-tirucallane-type **triterpenoids** (1-6) have been isolated from the diethyl ether extract of the pollen grains of sunflower (*Helianthus annuus*). These compounds were evaluated with respect to their inhibitory effects on the induction of **Epstein-Barr** virus early antigen (EBV-EA) induced by the tumor promoter 12-O-tetradecanoylphorbol 13-acetate (TPA) in Raji cells. All of the compounds tested showed potent inhibitory effects on EBV-EA activation (97-100% inhibition at 1×10^{-3} mol ratio/TPA).

L2 ANSWER 72 OF 100 MEDLINE on STN

ACCESSION NUMBER: 2003414053 MEDLINE

DOCUMENT NUMBER: PubMed ID: 12932121

TITLE: Absolute configuration of sesquiterpenes from *Crossopetalum tonduzii* and their inhibitory effects on Epstein-Barr virus early antigen activation in Raji cells.

AUTHOR: Jimenez Ignacio A; Bazzocchi Isabel L; Nunez Marvin J; Mukainaka Teruo; Tokuda Harukuni; Nishino Hoyoku; Konoshima Takao; Ravelo Angel G

CORPORATE SOURCE: Instituto Universitario de Bio-Organica Antonio Gonzalez, Universidad de La Laguna, Avenida Astrofisico Francisco Sanchez 2, La Laguna, 38206 Tenerife, Canary Islands, Spain.

SOURCE: Journal of natural products, (2003 Aug) Vol. 66, No. 8, pp. 1047-50.

Journal code: 7906882. ISSN: 0163-3864.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 200312

ENTRY DATE: Entered STN: 20030905

Last Updated on STN: 20031225

Entered Medline: 20031224

AB Two new **sesquiterpenoids** (1 and 2) with a dihydro-beta-agarofuran skeleton were isolated from *Crossopetalum tonduzii*. Their structures were elucidated on the basis of spectral analysis, including homonuclear and heteronuclear correlation NMR experiments (COSY, ROESY, HSQC, and HMBC). Their absolute configurations were determined by CD studies on 3, the benzoylated derivative of 1. Chemical correlations have allowed the absolute configurations of 4 and 5, two previously known dihydro-beta-agarofuran analogues, to be reported for the first time. Compounds 1, 2, and 5 showed strong antitumor-promoting effects on **Epstein-Barr** virus early antigen (EBV-EA) activation.

L2 ANSWER 73 OF 100 MEDLINE on STN

ACCESSION NUMBER: 2003411262 MEDLINE

DOCUMENT NUMBER: PubMed ID: 12951486

TITLE: Ichthyotoxic and anticarcinogenic effects of triterpenoids from *Sandoricum koetjape* bark.

AUTHOR: Ismail Intan Safinar; Ito Hideyuki; Mukainaka Teruo; Higashihara Hiroshi; Enjo Fumio; Tokuda Harukuni; Nishino Hoyoku; Yoshida Takashi

CORPORATE SOURCE: Faculty of Pharmaceutical Sciences, Okayama University, Okayama, Japan.

SOURCE: Biological & pharmaceutical bulletin, (2003 Sep) Vol. 26, No. 9, pp. 1351-3.

Journal code: 9311984. ISSN: 0918-6158.

PUB. COUNTRY: Japan

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 200404

ENTRY DATE: Entered STN: 20030903
Last Updated on STN: 20040410
Entered Medline: 20040409

AB After bioassay-guided fractionation of the extract from *Sandoricum koetjape* bark, which exhibited significant toxicity to killifish (*Oryzias latipes*), two ichthyotoxic **triterpenoids** were isolated and characterized as koetjapic acid and 3-oxo-olean-12-en-29-oic acid. These constituents, along with non-toxic katiconic acid, had a remarkable inhibitory effect on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol 13-acetate (TPA), which is a preliminary in vitro screening method for possible anti-tumor-promoting agents. Of the **triterpenoids** active in vitro, koetjapic acid appears to be a promising cancer chemopreventive agent, since it significantly delayed tumor promotion in two-stage mouse skin carcinogenesis induced by 7,12-dimethylbenz(a)anthracene and promoted by TPA.

L2 ANSWER 74 OF 100 MEDLINE on STN

ACCESSION NUMBER: 2003360271 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12893428
TITLE: Anticarcinogenic activity of natural sweeteners, cucurbitane glycosides, from *Momordica grosvenori*.
AUTHOR: Takasaki Midori; Konoshima Takao; Murata Yuji; Sugiura Masaki; Nishino Hoyoku; Tokuda Harukuni; Matsumoto Kazuhiro; Kasai Ryoji; Yamasaki Kazuo
CORPORATE SOURCE: Kyoto Pharmaceutical University, Misasagi, Yamashina-ku, Kyoto 607-8414, Japan.. midori@mb.kyoto-phu.ac.jp
SOURCE: Cancer letters, (2003 Jul 30) Vol. 198, No. 1, pp. 37-42. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200310
ENTRY DATE: Entered STN: 20030802
Last Updated on STN: 20031024
Entered Medline: 20031023

AB To search for cancer chemopreventive agents from natural resources, many phytochemicals and food additives have been screened. Consequently, two natural sweeteners, mogroside V and 11-oxo-mogroside V isolated from the fruits of *Momordica grosvenori*, exhibited strong inhibitory effect on the primary screening test indicated by the induction of **Epstein-Barr** virus early antigen (EBV-EA) by a tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA). These sweet glycosides, having cucurbitane **triterpenoid** aglycon, exhibited the significant inhibitory effects on the two-stage carcinogenesis test of mouse skin tumors induced by peroxynitrite (ONOO-) as an initiator and TPA as a promoter. Further, 11-oxo-mogroside V also exhibited the remarkable inhibitory effect on two-stage carcinogenesis test of mouse skin tumor induced by 7,12-dimethylbenz[a]anthracene (DMBA) as an initiator and TPA as a promoter.

L2 ANSWER 75 OF 100 MEDLINE on STN

ACCESSION NUMBER: 2003330383 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12860269
TITLE: Cancer chemopreventive activity of serratane-type triterpenoids on two-stage mouse skin carcinogenesis.
AUTHOR: Tanaka Reiko; Minami Toshifumi; Ishikawa Yohei; Matsunaga Shunyo; Tokuda Harukuni; Nishino Hoyoku
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, 4-20-1 Nasahara, Takatsuki, Osaka 569-1094, Japan.. tanakar@oysun01.oups.ac.jp
SOURCE: Cancer letters, (2003 Jul 10) Vol. 196, No. 2, pp. 121-6. Journal code: 7600053. ISSN: 0304-3835.

PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200308
ENTRY DATE: Entered STN: 20030716
Last Updated on STN: 20030821
Entered Medline: 20030820

AB Eleven serratane-type **triterpenoids** isolated from the stem bark of *Picea jezoensis* (Sieb. et Zucc.) Carr. var. *jezoensis* (Pinaceae) and the stem bark of *Picea jezoensis* (Sieb. et Zucc.) Carr. var. *hondoensis* (Mayer) Rehder (Pinaceae) and three synthetic analogs were studied for their possible inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA). 21-Episerratenediol, serratenediol, diepiserratenediol, 3 beta-hydroxyserrat-14-en-21-one, 3 alpha-methoxy-21 beta-hydroxyserrat-14-en-16-one, 3 beta-methoxyserrat-14-en-21 beta-yl acetate, 3 alpha-methoxyserrat-14-en-21 beta-yl acetate and 3 beta-methoxyserrat-14-en-21 alpha-yl acetate demonstrated strong inhibitory effects on the EBV-EA activation without showing any cytotoxicity, their effects being stronger than that of a representative control, oleanolic acid. Furthermore, 21-episerratenediol exhibited a remarkable inhibitory effect on skin tumor promotion in an in vivo two-stage mouse skin carcinogenesis test using 7,12-dimethylbenz[a]anthracene as an initiator and TPA as a promoter. The result of the present investigation indicated that 21-episerratenediol might be valuable as a potent cancer chemopreventive agent.

L2 ANSWER 76 OF 100 MEDLINE on STN

ACCESSION NUMBER: 2003232435 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12720376
TITLE: Isolation, structural elucidation, and inhibitory effects of **terpenoid** and lipid constituents from sunflower pollen on **Epstein-Barr** virus early antigen induced by tumor promoter, TPA.
AUTHOR: Ukiya Motohiko; Akihisa Toshihiro; Tokuda Harukuni; Koike Kazuo; Takayasu Junko; Okuda Hiroki; Kimura Yumiko; Nikaido Tamotsu; Nishino Hoyoku
CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8308, Japan.
CONTRACT NUMBER: CA 17625 (NCI)
SOURCE: Journal of agricultural and food chemistry, (2003 May 7) Vol. 51, No. 10, pp. 2949-57.
Journal code: 0374755. ISSN: 0021-8561.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200306
ENTRY DATE: Entered STN: 20030521
Last Updated on STN: 20030617
Entered Medline: 20030616

AB Eight fatty acid esters of triterpene alcohols (1-8), four free triterpene alcohols (9, 12, 17, and 18), four diterpene acids (19-22), two tocopherol-related compounds (23 and 24), four estolides (25-28), three syn-alkane-4,6-diols (29-31), one 1,3-dioxoalkanoic acid (32), and one aliphatic ketone (33), along with the mixture of free fatty acids, were isolated from the diethyl ether extract of the pollen grains of sunflower (*Helianthus annuus*). Among these compounds, 14 (2-8, 12, 23, 25-28, and 33) were new naturally occurring compounds, and their structures were determined on the basis of spectroscopic methods. Twenty-four **terpenoids** and lipids (1-4, 6-9, 12, and 19-33) and six free triterpene triols (10, 11, and 13-16), derived from their fatty acid esters (2, 3, and 5-8) by alkaline hydrolysis, were evaluated with respect

to their inhibitory effects on the induction of **Epstein-Barr** virus early antigen (EBV-EA) induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA), in Raji cells, which is known to be a primary screening test for antitumor promoters. Among the 30 compounds tested, 21 compounds possessing a di- or a polycyclic ring system in the molecule (1-4, 6-16, and 19-24) showed potent inhibitory effects on EBV-EA induction (91-100% inhibition at 1 x 10⁽³⁾ mol ratio/TPA).

L2 ANSWER 77 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2003128680 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12608849
TITLE: Chemical constituents of *Garcinia fusca*: structure elucidation of eight new xanthenes and their cancer chemopreventive activity.
AUTHOR: Ito Chihiro; Itoigawa Masataka; Takakura Tomoko; Ruangrungsi Nijisiri; Enjo Fumio; Tokuda Harukuni; Nishino Hoyoku; Furukawa Hiroshi
CORPORATE SOURCE: Faculty of Pharmacy, Meijo University, Tempaku, Nagoya 468-8503, Japan.
SOURCE: Journal of natural products, (2003 Feb) Vol. 66, No. 2, pp. 200-5.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200307
ENTRY DATE: Entered STN: 20030320
Last Updated on STN: 20030708
Entered Medline: 20030707
AB We describe the isolation and spectrometric structure elucidation of eight new xanthenes, fuscaxanthone A (1), B (2), C (3), D (4), E (5), F (6), G (7), and H (8), together with eight known xanthenes from the stem bark of *Garcinia fusca* collected in Thailand. All the new xanthenes were shown to have a **terpenoid** (prenyl and/or geranyl) side chain(s) in their molecules. We also present the results of a primary screening of the inhibitory effects of eight xanthenes (9-16) isolated as major components of this plant on 12-O-tetradecanoylphorbol-13-acetate induced **Epstein-Barr** virus early antigen activation in Raji cells.

L2 ANSWER 78 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2002669847 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12405766
TITLE: Inhibitory effects of cucurbitane glycosides and other **triterpenoids** from the fruit of *Momordica grosvenori* on **epstein-barr** virus early antigen induced by tumor promoter 12-O-tetradecanoylphorbol-13-acetate.
AUTHOR: Ukiya Motohiko; Akihisa Toshihiro; Tokuda Harukuni; Toriumi Masakazu; Mukainaka Teruo; Banno Norihiro; Kimura Yumiko; Hasegawa Jun-Ichi; Nishino Hoyoku
CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8308, Japan.
SOURCE: Journal of agricultural and food chemistry, (2002 Nov 6) Vol. 50, No. 23, pp. 6710-5.
Journal code: 0374755. ISSN: 0021-8561.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200212
ENTRY DATE: Entered STN: 20021115

Last Updated on STN: 20021227

Entered Medline: 20021226

AB Two new triterpene benzoates, 5-dehydrokarounidiol dibenzoate (1) and karounidiol dibenzoate (2), and two new triterpene glycosides, 5alpha,6alpha-epoxymogroside IE(1) (8) and 11-oxomogroside A(1) (9), along with 15 known **triterpenoids** (one triterpene benzoate, 3; three triterpene mono-ols, 4-6; one triterpene aglycon, 7; and 10 triterpene glycosides, 10-19), were isolated from the ethanol extract of the fruit of *Momordica grosvenori*. The structures of 1, 2, 8, and 9 were determined on the basis of spectroscopic and chemical methods. Among the known triterpene glycosides, mogroside I E(1) (12) was a new naturally occurring compound. Eighteen **triterpenoids** (2-19) and 11-oxomogrol (20), a hydrolysis product of 9, were evaluated with respect to their inhibitory effects on the induction of **Epstein-Barr** virus early antigen (EBV-EA) by 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells, which is known to be a primary screening test for antitumor promoters. All of the compounds tested showed potent inhibitory effects on EBV-EA induction (70-100% inhibition at 1×10^{-3} mol ratio/TPA).

L2 ANSWER 79 OF 100 MEDLINE on STN

ACCESSION NUMBER: 2002040216 MEDLINE

DOCUMENT NUMBER: PubMed ID: 11767120

TITLE: Anti-tumor-promoting activity of the diterpene from *Excoecaria agallocha*. II.

AUTHOR: Konoshima T; Konishi T; Takasaki M; Yamazoe K; Tokuda H

CORPORATE SOURCE: Kyoto Pharmaceutical University, Japan..

konosima@mb.kyoto-phu.ac.jp

SOURCE: Biological & pharmaceutical bulletin, (2001 Dec) Vol. 24, No. 12, pp. 1440-2.

Journal code: 9311984. ISSN: 0918-6158.

PUB. COUNTRY: Japan

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 200205

ENTRY DATE: Entered STN: 20020124

Last Updated on STN: 20020515

Entered Medline: 20020514

AB Eight new **diterpenoids** (1-8) have been isolated from the wood of *Excoecaria agallocha* (Euphorbiaceae) and their inhibitory effects on the induction of **Epstein-Barr** virus early antigen (EBV-EA) in Raji cells were examined to search for potent anti-tumor-promoters from natural resources. Of these compounds, the secolabdane-type **diterpenoid**, compound 7 exhibited a remarkable inhibitory effect on EBV-EA induction, and a significant anti-tumor-promoting effect in the mouse two-stage carcinogenesis test using 7,12-dimethylbenz[a]anthracene and 12-O-tetradecanovl-phorbol-13-acetate.

L2 ANSWER 55 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1990:195188 CAPLUS

DOCUMENT NUMBER: 112:195188

TITLE: Studies on the constituents of leguminous plants.
XII. The structures of new triterpenoid saponins from
Wistaria brachybotrys Sieb. et Zucc

AUTHOR(S): Konoshima, Takao; Kozuka, Mutsuo; Haruna, Mitsumasa;
Ito, Kazuo; Kimura, Takeatsu; Tokuda, Harukuni

CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan

SOURCE: Chemical & Pharmaceutical Bulletin (1989), 37(10),
2731-5

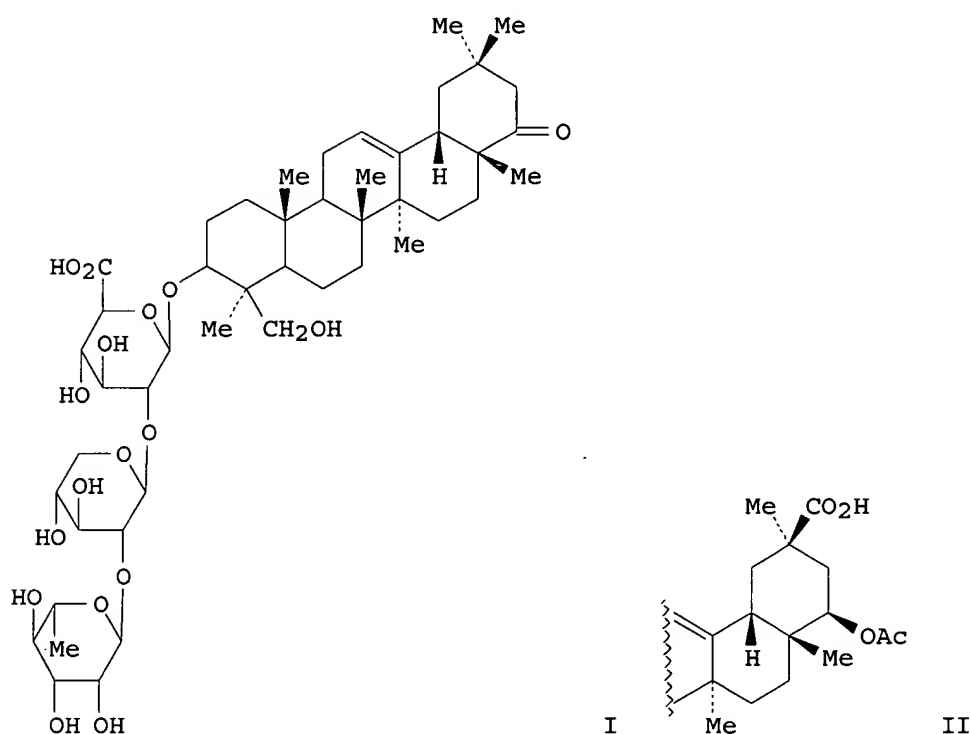
CODEN: CPBTAL; ISSN: 0009-2363

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Four new **triterpenoid** saponins (wistariasponins A, B1, B2 and C) were isolated as Me esters from the knots of *W. brachybotrys* (Leguminosae), and their structures were characterized as 3-O- $[\alpha$ -L-rhamnopyranosyl-(1 \rightarrow 2)- β -D-xylopyranosyl(1 \rightarrow 2)- β -D-glucuronopyranosyl]wistariasapogenol A, 3-O- $[\alpha$ -L-rhamnopyranosyl(1 \rightarrow 2)- β -D-xylopyranosyl(1 \rightarrow 2)- β -D-glucuronopyranosyl]wistariasapogenol B, 3-O- $[\alpha$ -L-rhamnopyranosyl(1 \rightarrow 2)- β -D-galactopyranosyl(1 \rightarrow 2)- β -D-glucuronopyranosyl]wistariasapogenol B and 3-O- $[\alpha$ -L-rhamnopyranosyl(1 \rightarrow 2)- β -D-xylopyranosyl-(1 \rightarrow 2)- β -D-glucuronopyranosyl]soyasapogenol B, resp., on the basis of chemical and physicochem. evidence. The inhibitory effects of these saponins and sapogenols on **Epstein-Barr** virus activation induced by a tumor promoter were also tested.

L2 ANSWER 53 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1991:628320 CAPLUS
 DOCUMENT NUMBER: 115:228320
 TITLE: Constituents of leguminous plants, XIII. New
 triterpenoid saponins from *Wistaria brachybotrys*
 AUTHOR(S): Konoshima, Takao; Kozuka, Mutsuo; Haruna, Mitsumasa;
 Ito, Kazuo
 CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan
 SOURCE: Journal of Natural Products (1991), 54(3), 830-6
 CODEN: JNPRDF; ISSN: 0163-3864
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



AB Two new **triterpenoid** saponins, wistariasaponins D (I) and G (II), and the known saponin dehydrosoyasaponin I were isolated from the knots of *Wistaria brachybotrys*. The structures of I and II were determined from their chemical and physicochem. evidence. The inhibitory effects of these saponins on the activation of **Epstein-Barr** virus early antigen that was induced by a tumor promoter were also tested for the primary screening of antitumor-promoting activities.

L2 ANSWER 46 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:441845 CAPLUS

DOCUMENT NUMBER: 122:281523

TITLE: Inhibitory effects of cucurbitane
triterpenoids on **Epstein-**
Barr virus activation and two-stage
carcinogenesis of skin tumor. II

AUTHOR(S): Konoshima, Takao; Takasaki, Midori; Kozuka, Mutsuo;
Nagao, Tsuneatsu; Okabe, Hikaru; Irino, Nobuto;
Nakasumi, Tetsuo; Tokuda, Harukuni; Nishino, Hoyoku

CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan

SOURCE: Biological & Pharmaceutical Bulletin (1995), 18(2),
284-7

CODEN: BPBLEO; ISSN: 0918-6158

PUBLISHER: Pharmaceutical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB To search for possible anti-tumor-promoters, we carried out a primary
screening of twenty-four 29-nor-cucurbitacin glucosides isolated from the
roots of *Cayaponia tayuya* (Cucurbitaceae) using an in vitro synergistic
assay system. Of these glucosides, cayaponosides B (5), B3 (7), D (8),
D3b (22) and C2 (23) exhibited significant inhibitory effects on
Epstein-Barr virus (EBV) activation induced by the tumor promoter,
12-O-tetradecanoylphorbol-13-acetate (TPA). Furthermore, 5 and 23
exhibited remarkable anti-tumor-promoting effects on mouse skin tumor
promotion in an in vivo two-stage carcinogenesis test.

L2 ANSWER 42 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:80532 CAPLUS

DOCUMENT NUMBER: 124:219390

TITLE: Inhibitory effects of lantadenes and related
triterpenoids on **Epstein-**
Barr virus activation

AUTHOR(S): Inada, Akira; Nakanishi, Tsutomu; Tokuda, Harukuni;
Nishino, Hoyoku; Iwashima, Akio; Sharma, Om P.

CORPORATE SOURCE: Fac. Pharmaceutical Sci., Setsunan Univ., Osaka,
573-01, Japan

SOURCE: Planta Medica (1995), 61(6), 558-9

CODEN: PLMEAA; ISSN: 0032-0943

PUBLISHER: Thieme

DOCUMENT TYPE: Journal

LANGUAGE: English

AB To search for possible inhibitors of tumor promotion, the inhibitory effects of lantadenes and related **triterpenoids** from *Lantana camara* L. (Verbenaceae) on **Epstein-Barr** virus activation in Raja cells were tested. The substitutions on the carboxylic acid through an ester bond might play an important role in the activity.

L2 ANSWER 40 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:228375 CAPLUS

DOCUMENT NUMBER: 126:262894

TITLE: Influence of Quillaja saponaria **triterpenoid** content on the immunomodulatory capacity of **Epstein-Barr** virus iscoms

AUTHOR(S): Dotsika, E.; Karagouni, E.; Sundquist, B.; Morein, B.; Morgan, A.; Villacres-Eriksson, M.

CORPORATE SOURCE: Hellenic Pasteur Institute, Athens, 115 21, Greece

SOURCE: Scandinavian Journal of Immunology (1997), 45(3), 261-268

CODEN: SJIMAX; ISSN: 0300-9475

PUBLISHER: Blackwell

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The immune responses to immunostimulating complexes (iscoms) containing recombinant **Epstein-Barr** virus (EBV) gp340 envelope protein was evaluated in BALB/c (H-2d) and CBA (H-2k) mice. Gp340-iscoms were used either with a low content of Quillaja **triterpenoid** adjuvant (L-iscoms) or supplemented with addnl. Quillaja adjuvant in the form of iscomatrix (S-iscoms). Class and subclass distribution of anti-gp340 antibodies, EBV-neutralizing antibodies, antigen-specific T cell proliferation and cytokine production were determined and these results compared to those obtained by immunization with non-adjuvated gp340. The H-2d and H-2k mice were characterized as low or high responders in respect to the level of specific anti-gp340 antibodies, secretion of IgG2a isotype, antigen-specific lymphoproliferative capacity, interferon- γ (IFN- γ) and interleukin-10 (IL-10) production in the basic immunizations with gp340. While presentation of the antigen in iscom formulations with low levels of Quillaja **triterpenoids** induces a moderate enhancement of the immune responses in the low responder H-2d mice, supplementation with high levels of iscomatrix immunomodulator was required to enhance the immune responses in the high responder H-2k mice. In both mouse strains s.c. immunization with S-iscoms resulted in a significant increase of IgG1- and IgG2a-specific antibodies, as well as in strong antigen-specific proliferative response confirmed by the simultaneous cytokine production. The enhanced antigen-specific secretion of IL-2 and IFN- γ together with the abrogation of IL-10 and the absence of IL-4 indicates that the responses were driven towards a Th1-type rather than Th2-type immune response. The S-iscom formulations minimized the differences in immune responses between the two mouse strains, but the capacity of immune sera to neutralize EBV transformation in vitro remained completely strain-dependent. These data indicate that immune responses generated by iscoms can be manipulated by altering the **triterpenoid** composition of the iscoms and that the levels of **triterpenoids** can determine whether or not a Th1-type response is made.

L2 ANSWER 41 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:445087 CAPLUS

DOCUMENT NUMBER: 125:157883

TITLE: Anti-tumor-promoting activities of triterpenoids from ferns. I

AUTHOR(S): Konoshima, Takao; Takasaki, Midori; Masuda, Kazuo; Arai, Yoko; Shiojima, Kenji; Ageta, Hiroyuki; Tokuda, Harukuni

CORPORATE SOURCE: Kyoto Pharmaceutical Univ., Kyoto, 604, Japan

SOURCE: Biological & Pharmaceutical Bulletin (1996), 19(7), 962-965

CODEN: BPBLEO; ISSN: 0918-6158

PUBLISHER: Pharmaceutical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB To search for possible anti-tumor-promoters (cancer chemopreventive

agents), the authors carried out primary screening of 23 **triterpenoid** hydrocarbons isolated from ferns using an in vitro synergistic assay system. Of these **triterpenoids**, hop17(21)-ene, neohop-13(18)-ene, neohop-12-ene, taraxerane, multiflor-9(11)-ene, multiflor-8-ene, glutin-5(10)-ene and taraxastane exhibited remarkable inhibitory effects on **Epstein-Barr** virus (EBV) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA). Further, compds. hop17(21)-ene and neohop-13(18)-ene exhibited remarkable anti-tumor-promoting effects on mouse skin tumor promotion in an in vivo two-stage carcinogenesis test using 7,12-dimethylbenz[a]anthracene (DMBA) as an initiator and TPA as a promoter.

L2 ANSWER 42 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:80532 CAPLUS

DOCUMENT NUMBER: 124:219390

TITLE: Inhibitory effects of lantadenes and related **triterpenoids** on **Epstein-Barr** virus activation

AUTHOR(S): Inada, Akira; Nakanishi, Tsutomu; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio; Sharma, Om P.

CORPORATE SOURCE: Fac. Pharmaceutical Sci., Setsunan Univ., Osaka, 573-01, Japan

SOURCE: Planta Medica (1995), 61(6), 558-9

CODEN: PLMEAA; ISSN: 0032-0943

PUBLISHER: Thieme

DOCUMENT TYPE: Journal

LANGUAGE: English

AB To search for possible inhibitors of tumor promotion, the inhibitory effects of lantadenes and related **triterpenoids** from *Lantana camara* L. (Verbenaceae) on **Epstein-Barr** virus activation in Raja cells were tested. The substitutions on the carboxylic acid through an ester bond might play an important role in the activity.

L2 ANSWER 43 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:919138 CAPLUS

TITLE: New cucurbitan triterpenoids from *Cowania mexicana*

AUTHOR(S): Takasaki, M.; Konoshima, T.

CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607, Japan

SOURCE: Book of Abstracts, 210th ACS National Meeting, Chicago, IL, August 20-24 (1995), Issue Pt. 1, AGFD-144. American Chemical Society: Washington, D. C.

CODEN: 61XGAC

DOCUMENT TYPE: Conference; Meeting Abstract

LANGUAGE: English

AB In a primary random screening of many plants and crude drugs for possible anti-tumor-promoters, the MeOH extract of *Cowania mexicana* showed strong inhibitory effect on **Epstein-Barr** virus activation induced by TPA. Bioassay-directed fractionation of the active extract led to the isolation of two new cucurbitan **triterpenoids** (1 and 2) together with known compds. (3 and 4). In this paper, we will present their isolation, structural elucidation and biol. activities.

L2 ANSWER 44 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:918999 CAPLUS

TITLE: Anti-tumor-promoting activities of triterpenoid glycosides - cancer chemoprevention by saponins.

AUTHOR(S): Konoshima, T.

CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607, Japan

SOURCE: Book of Abstracts, 210th ACS National Meeting, Chicago, IL, August 20-24 (1995), Issue Pt. 1, AGFD-003. American Chemical Society: Washington, D. C.

CODEN: 61XGAC

DOCUMENT TYPE: Conference; Meeting Abstract

LANGUAGE: English

AB Recently, many natural products having anti-tumor-promoting activities have been isolated from many medicinal plants. As a continuation of our biol. studies on the potential anti-tumor-promoting activities (cancer chemopreventive agents) of natural products, we have carried out a primary screening test of many Japanese and Chinese folk medicines using their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by TPA. Of these compds., several **triterpenoids** exhibited strong inhibitory effects on EBV-EA activation and on two-stage carcinogenesis of mouse skin tumor. In this paper, the cancer chemopreventive activities of these **triterpenoid** glycosides (soyasaponin I from *Wistaria brachybotrys*, gleditsia saponin C from *Gleditsia japonica*, ginsenoside Rg1 from *Panax notoginseng* etc.) will be presented and discussed.

L2 ANSWER 45 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:441846 CAPLUS

DOCUMENT NUMBER: 122:305851

TITLE: Inhibitors of skin-tumor promotion. XIII. Inhibitory effects of euglobins and their related compounds on Epstein-Barr virus activation and on two-stage carcinogenesis of mouse skin tumors. (2)

AUTHOR(S): Takasaki, Midori; Konoshima, Takao; Kozuka, Mutsuo; Yoneyama, Koichi; Yoshida, Shigeo; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio

CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan

SOURCE: Biological & Pharmaceutical Bulletin (1995), 18(2), 288-94

CODEN: BPBLEO; ISSN: 0918-6158

PUBLISHER: Pharmaceutical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB One hundred and fifteen synthesized mono, di, and trihydroxybenzamide and thiobenzamide derivs. having structures related to euglobins were examined for their inhibitory effects on Epstein-Barr virus (EBV) activation by 12-O-tetradecanoylphorbol-13-acetate (TPA) as a primary screening test for anti-tumor-promoters. In general, 3-acyl-2,4,6-trihydroxybenzamide and 3-acyl-2,4,6-trihydroxythiobenzamide derivs. exhibited strong or moderate activities, and the latter compds. were less cytotoxic than the former. Meanwhile, little or no activity was observed with mono and dihydroxybenzamide and dihydroxythiobenzamide derivs. Structural requirements for the activities of these compds. have been discussed in detail. Among the above compds., compds. 36 and 73, which were significantly active on the inhibition of EBV activation, were investigated using a two-stage mouse skin carcinogenesis test induced by 7,12-dimethylbenz[a]anthracene (DMBA) and TPA. The results of the in vivo test showed that both compds. have a stronger inhibitory effect than that of the well-known anti-tumor-promoter, glycyrrhetic acid. These results suggested that the two compds. might be valuable as anti-tumor-promoters in chemical carcinogenesis.

L2 ANSWER 46 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:441845 CAPLUS

DOCUMENT NUMBER: 122:281523

TITLE: Inhibitory effects of cucurbitane **triterpenoids** on **Epstein-Barr** virus activation and two-stage carcinogenesis of skin tumor. II

AUTHOR(S): Konoshima, Takao; Takasaki, Midori; Kozuka, Mutsuo; Nagao, Tsuneatsu; Okabe, Hikaru; Irino, Nobuto; Nakasumi, Tetsuo; Tokuda, Harukuni; Nishino, Hoyoku

CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan

SOURCE: Biological & Pharmaceutical Bulletin (1995), 18(2),
284-7
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English

AB To search for possible anti-tumor-promoters, we carried out a primary screening of twenty-four 29-nor-cucurbitacin glucosides isolated from the roots of *Cayaponia tayuya* (Cucurbitaceae) using an in vitro synergistic assay system. Of these glucosides, cayaponosides B (5), B3 (7), D (8), D3b (22) and C2 (23) exhibited significant inhibitory effects on Epstein-Barr virus (EBV) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA). Furthermore, 5 and 23 exhibited remarkable anti-tumor-promoting effects on mouse skin tumor promotion in an in vivo two-stage carcinogenesis test.

L2 ANSWER 47 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1994:600901 CAPLUS

DOCUMENT NUMBER: 121:200901

TITLE: Inhibition of Epstein-Barr virus (EBV) activation by triterpenes in *Sesamum indicum* L. callus

AUTHOR(S): Okada, Naomasa; Takebayashi, Keiichi; Kawashima, Jun; Niwano, Mitsuru; Mimura, Akio; Takahara, Yoshimasa; Tokuda, Harukuni

CORPORATE SOURCE: Biotechnol. Res. Lab., Kobe Steel, Ltd., Tsukuba, 305, Japan

SOURCE: Shokubutsu Soshiki Baiyo (1994), 11(2), 145-9

CODEN: SSBAET; ISSN: 0289-5773

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two triterpenes, esculentinic acid and 3 β -(trans-p-coumaroyloxy)-2 α ,23-dihydroxyurs-12-en-28-oic acid, were isolated from *Sesamum indicum* L. callus cells and characterized and their anti-tumor promoter activities were examined. These compds. inhibited Epstein-Barr virus (EBV) activation in Raji cells induced by 12-O-tetradecanoylphorbol-13-acetate (TPA) in short-term in vitro assay. The inhibitory effects were nearly equal to those of all-trans-retinoic acid. Viabilities of exponentially growing Raji cells were .apprx.85%. Neither showed any cytotoxicity at 4 μ g/mL.

L2 ANSWER 48 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1994:473248 CAPLUS

DOCUMENT NUMBER: 121:73248

TITLE: Inhibitory effects of cucurbitane triterpenoids on Epstein-Barr virus activation and two-stage carcinogenesis of skin tumors

AUTHOR(S): Konoshima, Takao; Takasaki, Midori; Tatsumoto, Takeshi; Kozuka, Mutsuo; Kasai, Ryoji; Tanaka, Osamu; Nie, Rui Lin; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio

CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607, Japan

SOURCE: Biological & Pharmaceutical Bulletin (1994), 17(5), 668-71

CODEN: BPBLEO; ISSN: 0918-6158

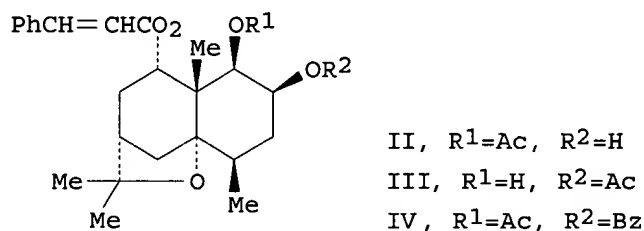
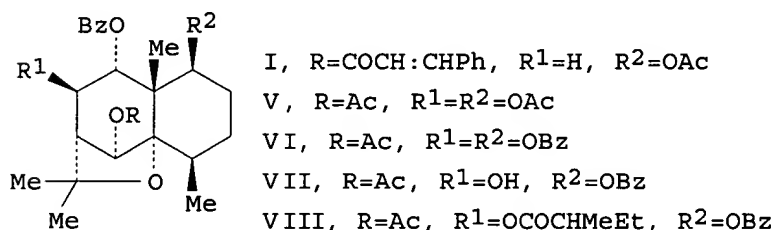
DOCUMENT TYPE: Journal

LANGUAGE: English

AB To search for possible anti-tumor-promoters, the authors carried out a primary screening of 21 cucurbitane triterpenoids using an in vitro assay system. Of these triterpenoids, scandenoside R6 (6), 23,24-dihydrocucurbitacin F (14), 25-acetyl-23,24-dihydrocucurbitacin F (15), 2-O- β -D-glucopyranosyl-23,24-dihydrocucurbitacin F (17) and cucurbitacin F (18) exhibited significant inhibitory effects on Epstein-Barr virus (EBV) activation induced by the tumor

promoter, 12-O-tetradecanoyl-phorbol-13-acetate (TPA). Further, compds. 14 and 17 exhibited remarkable anti-tumor-promotion effects on mouse skin tumor promotion in an in vivo two-stage carcinogenesis test.

L2 ANSWER 49 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1993:556281 CAPLUS
 DOCUMENT NUMBER: 119:156281
 TITLE: Structures of sesquiterpene polyol esters from *Celastrus stephanotiifolius* with potential tumor-promotion inhibitory activity
 AUTHOR(S): Takaishi, Yoshihisa; Ohshima, Syunji; Nakano, Kimiko; Tomimatsu, Toshiaki; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio
 CORPORATE SOURCE: Fac. Pharm. Sci., Univ. Tokushima, Tokushima, 770, Japan
 SOURCE: Journal of Natural Products (1993), 56(6), 815-24
 CODEN: JNPRDF; ISSN: 0163-3864
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



AB Esters of eight new (I-VIII) and five known **sesquiterpenoid** polyalcs. have been isolated from *Celastrus stephanotiifolius*. Their structures were established on the basis of chemical reactions and spectral anal. The structural elucidation indicated that the structures of some related compds. should be revised. The isolated sesquiterpenes were observed to inhibit **Epstein-Barr** virus early antigen activation significantly at low doses.

L2 ANSWER 50 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1993:468096 CAPLUS
 DOCUMENT NUMBER: 119:68096
 TITLE: Phytochemical studies on meliaceous plants. VIII. Structures and inhibitory effects on **Epstein-Barr** virus activation of **triterpenoids** from leaves of *Chisocheton macrophyllus* King
 AUTHOR(S): Inada, Akira; Somekawa, Midori; Murata, Hiroko; Nakanishi, Tsutomu; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio; Darnaedi, Dedy; Jurata, Jin

CORPORATE SOURCE: Fac. Pharm. Sci., Setsunan Univ., Hirakata, 573-01, Japan
SOURCE: Chemical & Pharmaceutical Bulletin (1993), 41(3), 617-19
CODEN: CPBTAL; ISSN: 0009-2363
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A 24-epimeric mixture of a new **triterpenoid**, 24-hydroxydammar-20,25-dien-3-one, and two known **triterpenoids**, moronic acid and betulonic acid, were isolated from leaves of *Chisocheton macrophyllus*, and the inhibitory effects of these **triterpenoids** on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate were tested.

L2 ANSWER 51 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1993:139240 CAPLUS
DOCUMENT NUMBER: 118:139240
TITLE: Inhibitory effects of dihydroagarofuran sesquiterpenes on Epstein-Barr virus activation. [Erratum to document cited in CA118(7):51849w]
AUTHOR(S): Takaishi, Yoshihisa; Ujita, Kunie; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio; Fujita, Tetsuro
CORPORATE SOURCE: Fac. Pharm. Sci., Univ. Tokushima, Tokushima, 770, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (1992), 67(2-3), 215
CODEN: CALEDQ; ISSN: 0304-3835
DOCUMENT TYPE: Journal
LANGUAGE: English

AB An error in the Summary and an error in the text have been corrected. The errors were not reflected in the abstract or the index entries.

L2 ANSWER 52 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

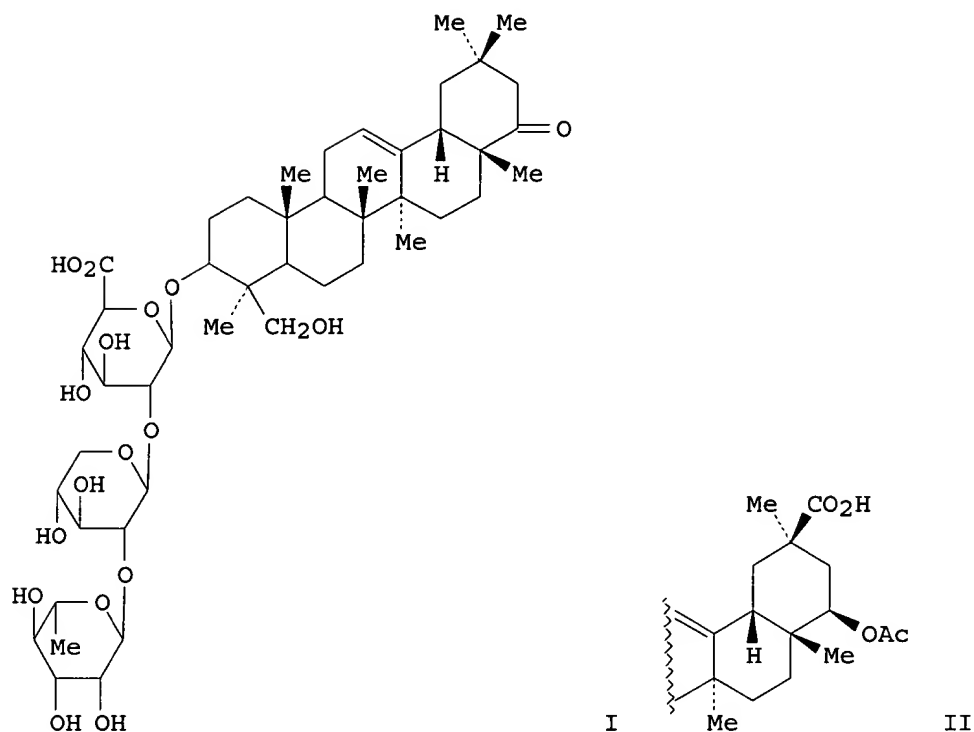
ACCESSION NUMBER: 1993:51849 CAPLUS
DOCUMENT NUMBER: 118:51849
TITLE: Inhibitory effects of dihydroagarofuran sesquiterpenes on Epstein-Barr virus activation
AUTHOR(S): Takaishi, Yoshihisa; Ujita, Kunie; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio; Fujita, Tetsuro
CORPORATE SOURCE: Fac. Pharm. Sci., Univ. Tokushima, Tokushima, 770, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (1992), 65(1), 19-26
CODEN: CALEDQ; ISSN: 0304-3835
DOCUMENT TYPE: Journal
LANGUAGE: English

AB To search for possible antitumor promoters, the authors carried out a primary screening of thirty-seven dihydroagarofuran sesquiterpenes from *Tripterygium wilfordii* Hook fil. var. *regelii* Makino and *Euonymus sieboldianus* Blume, using their possible inhibitory effects on the Epstein-Barr virus early antigen (EBV-EA) activation which is induced by 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells. Some of these sesquiterpenes, triptofordin, 1,2,6,8,15-pentaacetoxy-9-benzoyloxy-4-hydroxy- β -dihydroagarofuran, and triptogelin A-1 have been observed to significantly inhibit the EBV-EA activation at low doses. Based on the results, the structural requirements for the activity of these compounds are discussed.

L2 ANSWER 53 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

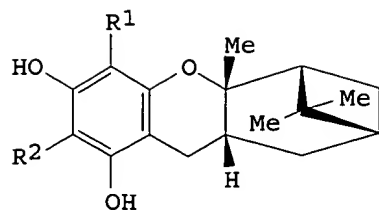
ACCESSION NUMBER: 1991:628320 CAPLUS
DOCUMENT NUMBER: 115:228320
TITLE: Constituents of leguminous plants, XIII. New triterpenoid saponins from *Wistaria brachybotrys*
AUTHOR(S): Konoshima, Takao; Kozuka, Mutsuo; Haruna, Mitsumasa; Ito, Kazuo
CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan

SOURCE: Journal of Natural Products (1991), 54(3), 830-6
 CODEN: JNPRDF; ISSN: 0163-3864
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



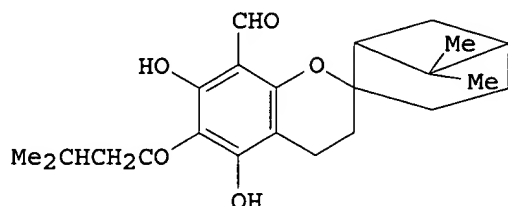
AB Two new **triterpenoid** saponins, wistariasaponins D (I) and G (II), and the known saponin dehydrosoyasaponin I were isolated from the knots of *Wistaria brachybotrys*. The structures of I and II were determined from their chemical and physicochem. evidence. The inhibitory effects of these saponins on the activation of **Epstein-Barr** virus early antigen that was induced by a tumor promoter were also tested for the primary screening of antitumor-promoting activities.

L2 ANSWER 54 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1990:608333 CAPLUS
 DOCUMENT NUMBER: 113:208333
 TITLE: Structures of euglobal-G1, -G2, and -G3 from *Eucalyptus grandis*, three new inhibitors of Epstein-Barr virus activation
 AUTHOR(S): Takasaki, Midori; Konoshima, Takao; Shingu, Tetsuro; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio; Kozuka, Mutsuo
 CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan
 SOURCE: Chemical & Pharmaceutical Bulletin (1990), 38(5), 1444-6
 CODEN: CPBTAL; ISSN: 0009-2363
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



I, R¹=COCH₂CHMe₂, R²=CHO

II, R¹=CHO, R²=COCH₂CHMe₂



III

AB Three new euglobals with acylphloroglucinol-monoterpene structures, named euglobal G1 (I), G2 (II), and G3 (III) were isolated from the chloroform extract of the juvenile leaves of *E. grandis* (Myrtaceae). The structures of these new compds. were determined from spectral data. The compds. strongly inhibited the Epstein-Barr virus activation.

L2 ANSWER 55 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1990:195188 CAPLUS

DOCUMENT NUMBER: 112:195188

TITLE: Studies on the constituents of leguminous plants. XII. The structures of new triterpenoid saponins from *Wistaria brachybotrys* Sieb. et Zucc

AUTHOR(S): Konoshima, Takao; Kozuka, Mutsuo; Haruna, Mitsumasa; Ito, Kazuo; Kimura, Takeatsu; Tokuda, Harukuni

CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan

SOURCE: Chemical & Pharmaceutical Bulletin (1989), 37(10), 2731-5

CODEN: CPBTAL; ISSN: 0009-2363

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Four new triterpenoid saponins (wistariasaponins A, B1, B2 and C) were isolated as Me esters from the knots of *W. brachybotrys* (Leguminosae), and their structures were characterized as 3-O-[α-L-rhamnopyranosyl-(1→2)-β-D-xylopyranosyl(1→2)-β-D-glucuronopyranosyl]wistariasapogenol A, 3-O-[α-L-rhamnopyranosyl(1→2)-β-D-xylopyranosyl(1→2)-β-D-glucuronopyranosyl]wistariasapogenol B, 3-O-[α-L-rhamnopyranosyl(1→2)-β-D-galactopyranosyl(1→2)-β-D-glucuronopyranosyl]wistariasapogenol B and 3-O-[α-L-rhamnopyranosyl(1→2)-β-D-xylopyranosyl-(1→2)-β-D-glucuronopyranosyl]soyasapogenol B, resp., on the basis of chemical and physicochem. evidence. The inhibitory effects of these saponins and sapogenols on Epstein-Barr virus activation induced by a tumor promoter were also tested.

L2 ANSWER 56 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1990:193553 CAPLUS

DOCUMENT NUMBER: 112:193553

TITLE: Non-promoting diterpene esters can induce Epstein-Barr virus early antigen expression in the Raji cell line

AUTHOR(S): Evans, A. T.; Brooks, G.; Evans, F. J.

CORPORATE SOURCE: Dep. Pharmacognosy, Sch. Pharm., London, WC1N 1AX, UK

SOURCE: Cancer Letters (Shannon, Ireland) (1990), 49(1), 25-9

CODEN: CALEDQ; ISSN: 0304-3835

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A range of diterpene ester ligands with selective biol. activity (e.g., irritant but not tumor promoting) were tested for their ability to induce Epstein-Barr virus (EBV) early antigen expression in the lymphoblastoid Raji cell line. All C12/C13 substituted compds. were capable of inducing some antigen expression at nanomolar - micromolar levels, including desacetyl- α -sapinine, a compound largely devoid of biol. activity. The nonpromoting, fluorescent compound, sapintoxin A, was virtually equipotent with promoting compds. Evidently, although the assay has relevance to the specific condition of chronic diterpene ester exposure occurring in conjunction with high EBV infection rates, there was relatively poor correlation with mouse skin tumor promoting potential.

L2 ANSWER 57 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1990:51876 CAPLUS

DOCUMENT NUMBER: 112:51876

TITLE: Studies on the biosynthesis of indole alkaloid tumor promoter teleocidin

AUTHOR(S): Irie, K.; Kajiyama, S.; Funaki, A.; Koshimizu, K.; Hayashi, H.; Arai, M.

CORPORATE SOURCE: Dep. Food Sci. Technol., Kyoto Univ., Kyoto, Japan

SOURCE: Tennen Yuki Kagobutsu Toronkai Koen Yoshishu (1989), 31st, 308-15

CODEN: TYKYDS

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB Teleocidins produced by actinomycetes are potent tumor promoters and peculiar indole alkaloids containing a 9-membered lactam ring and a complex **monoterpenoid** moiety. Among the teleocidin-producing actinomycetes, Streptovercillium blastmyceticum NA34-17, which was previously found to produce the **Epstein-Barr** virus early antigen inducing indole alkaloids, has a characteristic feature of producing (-)-indolactam V (I), the common biosynthetic intermediate of teleocidins, in quantity. This characteristic would be advantageous to obtaining a wide variety of biosynthetic intermediates of teleocidins. Using this microorganism, a possible biosynthetic pathway of teleocidins was proposed on the basis of feeding expts. with several D- or ¹³C-labeled precursors and isolation of new teleocidin-related metabolites named blastmycetins D (II) and E (III). Feeding expts. with several D- or ¹³C-labeled amino acids and possible biosynthetic precursor showed that I is biosynthesized from L-tryptophan, L-valine and L-methionine via N-methyl-L-valyl-L-tryptophanol. Based on the isolation of II and III, and feeding expts. with D-labeled L-methionine, the hypothesis is presented that (-)-N1-nerylindolactam V is a common biosynthetic intermediate of teleocidins and that the complex **monoterpenoid** moieties of teleocidins, for example those of olivoretin A, C and D, arose from differences in the the sequence of the methylation and the aza-Claisen rearrangement and the position of the methylation.

L2 ANSWER 58 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1988:562908 CAPLUS

DOCUMENT NUMBER: 109:162908

TITLE: Inhibitory effects of 12-O-tetradecanoylphorbol-13-acetate- and teleocidin B-induced Epstein-Barr virus by saponins and its related compounds

AUTHOR(S): Tokuda, Harukuni; Konoshima, Takao; Kozuka, Mutsuo; Kimura, Takeatsu

CORPORATE SOURCE: Fac. Med., Kyoto Univ., Kyoto, 606, Japan

SOURCE: Cancer Letters (Shannon, Ireland) (1988), 40(3), 309-17

CODEN: CALEDQ; ISSN: 0304-3835

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The inhibitory effects of monoterpene and triterpene glycosides on the activation of Epstein-Barr virus (EBV) by 12-O-tetradecanoylphorbol-13-acetate (TPA) and teleocidin B were studied in Raji cells. Concomitant treatment of Raji cells with TPA or Teleocidin B and the glycosides showed the inhibition of EBV activation. In vitro structure-activity studies were conducted on a variety of triterpene glycosides having a 1-sugar chain (monodesmoside), a 2-sugar chain (bidesmoside), and an acyl side-chain. Among these glycosides, triterpene 3-O-glycosides and acylated saponins effectively inhibited EBV activation; therefore, the sugar chain at C-3 of the triterpene and(or) the acyl side-chain were determined to be essential for the inhibitory activities in this test system.

L2 ANSWER 59 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1987:631130 CAPLUS

DOCUMENT NUMBER: 107:231130

TITLE: Structure-activity studies of the indole alkaloid tumor promoter teleocidins

AUTHOR(S): Irie, Kazuhiro; Hagiwara, Nobuyuki; Tokuda, Harukuni; Koshimizu, Koichi

CORPORATE SOURCE: Fac. Agric., Univ. Kyoto, Kyoto, 606, Japan

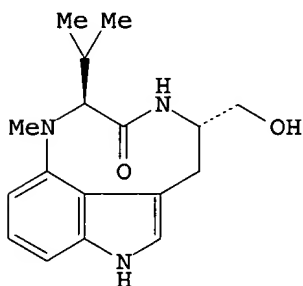
SOURCE: Carcinogenesis (1987), 8(4), 547-52

CODEN: CRNGDP; ISSN: 0143-3334

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



I

AB Possible tumor-promoting activities of teleocidins and several microbial metabolites in vivo were evaluated by **Epstein-Barr** virus early antigen-inducing activity and inhibition of specific binding of [³H]TPA to a mouse epidermal particulate fraction. These 2 biol. activities correlated well for each derivative. Large substituents at positions 2 and 5 remarkably lowered the activities, indicating that the structural requirements for the activities of these domains are especially strict. To investigate in detail the contribution of position 2 of (-)-indolactam V (I) to the activities, new microbial metabolites, (-)-2-oxyindolactam V and blastmycetin B and C, were also tested. These compds. were inactive, suggesting that the double bond at position 2 plays an important role for the activities. Substituents at position 7 generally enhanced the activities and even blastmycetin A, which is a dimer of (-)-indolactam V, showed high activities. The effects of the substituents on binding ability to the TPA receptor were analyzed quant. using physicochem. substituent parameters and regression anal. The results exhibited the fact that hydrophobicity of the substituents plays a critical role for receptor binding, and supported the hypothesis that the **monoterpenoid** moiety of teleocidins is involved in the nonspecific hydrophobic interaction with phospholipids in cell membrane.

L2 ANSWER 20 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:751584 CAPLUS

DOCUMENT NUMBER: 138:151

TITLE: Inhibitory Effects of Cucurbitane Glycosides and Other
Triterpenoids from the Fruit of *Momordica*
grosvenori on **Epstein-Barr** Virus
Early Antigen Induced by Tumor Promoter
12-O-Tetradecanoylphorbol-13-acetate

AUTHOR(S): Ukiya, Motohiko; Akihisa, Toshihiro; Tokuda, Harukuni;
Toriumi, Masakazu; Mukainaka, Teruo; Banno, Norihiro;
Kimura, Yumiko; Hasegawa, Jun-ichi; Nishino, Hoyoku
CORPORATE SOURCE: College of Science and Technology, Nihon University,
Chiyoda-ku, Tokyo, 101-8308, Japan

SOURCE: Journal of Agricultural and Food Chemistry (2002),
50(23), 6710-6715

CODEN: JAFCAU; ISSN: 0021-8561

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two new triterpene benzoates, 5-dehydrokarounidiol dibenzoate (1) and
karounidiol dibenzoate (2), and two new triterpene glycosides,
5 α ,6 α -epoxymogroside IE1 (8) and 11-oxomogroside A1 (9), along
with 15 known **triterpenoids** (one triterpene benzoate, 3; three
triterpene mono-ols, 4-6; one triterpene aglycon, 7; and 10 triterpene
glycosides, 10-19), were isolated from the ethanol extract of the fruit of
Momordica grosvenori. The structures of 1, 2, 8, and 9 were determined on the
basis of spectroscopic and chemical methods. Among the known triterpene
glycosides, mogroside I E1 (12) was a new naturally occurring compound
Eighteen **triterpenoids** (2-19) and 11-oxomogrol (20), a
hydrolysis product of 9, were evaluated with respect to their inhibitory
effects on the induction of **Epstein-Barr** virus early
antigen (EBV-EA) by 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji
cells, which is known to be a primary screening test for antitumor
promoters. All of the compds. tested showed potent inhibitory effects on
EBV-EA induction (70-100% inhibition at 1+103 mol ratio/TPA).

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 21 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:727037 CAPLUS

DOCUMENT NUMBER: 137:242159

TITLE: Carcinogenesis promotion inhibitors containing
serratane-type triterpenoids

INVENTOR(S): Tanaka, Reiko; Yoshitake, Akira

PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|-------------------|----------|-----------------|----------|
| JP 2002275057 | A2 | 20020925 | JP 2001-80474 | 20010321 |
| PRIORITY APPLN. INFO.: | | | JP 2001-80474 | 20010321 |
| OTHER SOURCE(S): | MARPAT 137:242159 | | | |

AB The invention provides serratane-type **triterpenoids** especially
isolated from *Picea jezoensis* or *Picea jezoensis hondoensis* as
carcinogenesis promotion inhibitors. A compound 13 α -,14 α -Epoxy-
3 β -methoxyserratane-21 β -ol was isolated from *Picea jezoensis* bark
and its inhibitory effects on **Epstein-Barr** virus early
antigen (EBV-EA) activation induced by 2-O-tetradecanoylphorbol-13-acetate

(TPA) was tested.

L2 ANSWER 22 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:879813 CAPLUS
DOCUMENT NUMBER: 136:160989
TITLE: Anti-tumor-promoting activity of the diterpene from
Excoecaria agallocha. II
AUTHOR(S): Konoshima, Takao; Konishi, Tenji; Takasaki, Midori;
Yamazoe, Kiyonori; Tokuda, Harukuni
CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607-8414,
Japan
SOURCE: Biological & Pharmaceutical Bulletin (2001), 24(12),
1440-1442
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Eight new **diterpenoids** (1-8) have been isolated from the wood of
Excoecaria agallocha (Euphorbiaceae) and their inhibitory effects on the
induction of **Epstein-Barr** virus early antigen (EBV-EA)
in Raji cells were examined to search for potent anti-tumor-promoters from
natural resources. Of these compds., the secolabdane-type
diterpenoid, compound 7 exhibited a remarkable inhibitory effect on
EBV-EA induction, and a significant anti-tumor-promoting effect in the
mouse two-stage carcinogenesis test using 7,12-dimethylbenz[a]anthracene
and 12-O-tetradecanoyl-phorbol-13-acetate.
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 23 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:863496 CAPLUS
DOCUMENT NUMBER: 135:366719
TITLE: Composition for and method of treatment of Kaposi's
sarcoma and Kaposi's sarcoma-associated herpesvirus
infection using triterpenoids
INVENTOR(S): Flore, Ornella
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 16 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|-------------|
| US 6323183 | B1 | 20011127 | US 1999-324473 | 19990602 |
| US 2002091158 | A1 | 20020711 | US 2001-976838 | 20011015 |
| PRIORITY APPLN. INFO.: | | | US 1999-324473 | A3 19990602 |

AB Methods and compns. for treating Kaposi's sarcoma and **Epstein
Barr** virus using a a therapeutic derivative of a **triterpenoid**
acid and derivs. thereof are disclosed. The present invention relates to
the use of a **triterpenoid** preferably a glycyrrhizic acid
(glycyrrhizin) to inhibit the transcription of viral latent genes and the
consequential viral latent cycle at doses that do not affect the
uninfected cells. Using glycyrrhizic acid and derivs., the Kaposi's
sarcoma-associated herpesvirus (KSHV) infected cells are completely killed
six days after treatment.
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 24 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:709029 CAPLUS
DOCUMENT NUMBER: 136:95571

TITLE: Anti-tumor promoting effects of multiflorane-type triterpenoids and cytotoxic activity of karounidiol against human cancer cell lines

AUTHOR(S): Akihisa, T.; Tokuda, H.; Ichiishi, E.; Mukainaka, T.; Toriumi, M.; Ukiya, M.; Yasukawa, K.; Nishino, H.

CORPORATE SOURCE: Nihon University, College of Science and Technology, Tokyo, Chiyoda-ku, 101-8308, Japan

SOURCE: Cancer Letters (Shannon, Ireland) (2001), 173(1), 9-14
CODEN: CALEDQ; ISSN: 0304-3835

PUBLISHER: Elsevier Science Ireland Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Forty-nine multiflorane-type **triterpenoids** consisting of 11 compds. isolated from the seeds of *Trichosanthes kirilowii* (Cucurbitaceae) and 38 of their derivs. have been evaluated for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate in Raji cells as a primary screening test for antitumor promoters. All of the compds. tested showed an inhibitory effect against EBV-EA activation, and among which 43 were revealed to possess remarkable activity with potencies either comparable to or stronger than that of glycyrrhetic acid, a known natural antitumor promoter. Their structure-activity relation is discussed. Evaluation of the cytotoxic activity of karounidiol against human cancer cell lines exhibited cytotoxicity especially against a human renal cancer.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 25 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:686777 CAPLUS

DOCUMENT NUMBER: 136:79360

TITLE: Cancer chemopreventive agents, serratane-type triterpenoids from *Picea jezoensis*

AUTHOR(S): Tanaka, R.; Minami, T.; Tsujimoto, K.; Matsunaga, S.; Tokuda, H.; Nishino, H.; Terada, Y.; Yoshitake, A.

CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Takatsuki, Osaka, 569-1094, Japan

SOURCE: Cancer Letters (Shannon, Ireland) (2001), 172(2), 119-126
CODEN: CALEDQ; ISSN: 0304-3835

PUBLISHER: Elsevier Science Ireland Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Seven serratane-type **triterpenoids** isolated from the cuticle of *Picea jezoensis* (Sieb. et Zucc.) Carr. *jezoensis* (Pinaceae) and the stem bark of *Picea jezoensis* (Sieb. et Zucc.) Carr. *hondoensis* (Mayer) Rehder (Pinaceae) were studied their possible inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA). All compds. showed strong inhibitory effects on the EBV-EA activation, being stronger than that of oleanolic acid, which exerts on cancer preventive activity in animal carcinogenesis models. Among these compds., 13 α , 14 α -epoxy-3 β -methoxyserrat-21 β -ol and 3 β -methoxy-21 α -hydroxyserrat-14-en-29-al were investigated for the inhibitory effects in a two-stage mouse skin carcinogenesis test on mouse skin using 7,12-dimethylbenz[a]anthracene as initiator and TPA as promoter. 13 α ,14 α -Epoxy-3 β -methoxyserrat-21 β -ol was found to exhibit the excellent antitumor promoting activity in the in vivo carcinogenesis test.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 26 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:467000 CAPLUS
 DOCUMENT NUMBER: 135:313267
 TITLE: Anti-tumor promoting diterpenes from the stem bark of Thuja standishii (Cupressaceae)
 AUTHOR(S): Iwamoto, M.; Ohtsu, H.; Tokuda, H.; Nishino, H.; Matsunaga, S.; Tanaka, R.
 CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Takatsuki, Osaka, 569-1094, Japan
 SOURCE: Bioorganic & Medicinal Chemistry (2001), 9(7), 1911-1921
 CODEN: BMECEP; ISSN: 0968-0896
 PUBLISHER: Elsevier Science Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 135:313267
 AB Three new labdane-type **diterpenoids**, labda-8(17),13-dien-15,12R-olid-19-oic acid (1), 12S-hydroxylabda-8(17),13(16),14-trien-19-oic acid (2) and 13-ethoxylabda-8(17),11,14-trien-19-oic acid (3), along with known **diterpenoids**, trans-communic acid (4), totarol (5), 12-methoxyabieta-8,11,13-trien-11-ol (6), and 7 α ,8 α -epoxy-6 α -hydroxyabieta-9(11),13-dien-12-one (7) were isolated from the stem bark of Thuja standishii. The structures of 1-3 were established by spectroscopic methods and chemical conversion. These compds. together with standishinal (8), 12-hydroxy-6,7-seco-abieta-8,11,13-trien-6,7-dial (9) and 6 α -hydroxysugiol (10) were tested for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA), as a test for potential cancer chemopreventive agents. Compound 10 showed strong inhibitory effect on EBV-EA induction (100% inhibition at 1000 mol ratio/TPA), and compds. 2 and 6 showed moderate inhibitory effects on EBV-EA induction. In addition, 15-oxolabda-8(17),11Z,13E-trien-19-oic acid (11) was found to exhibit the anti-tumor promoting activity in two-stage mouse skin carcinogenesis test using 7,12-dimethylbenz[a]anthracene and TPA. 15-Oxolabda-8(17),11Z,13E-trien-19-oic acid exhibited the anti-tumor promoting activity in vivo two-stage mouse skin carcinogenesis test using 7,12-dimethylbenz[a]anthracene and TPA.
 REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 27 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2001:176331 CAPLUS
 DOCUMENT NUMBER: 134:338255
 TITLE: Abietane **diterpenoids** from the cones of Larix kaempferi and their inhibitory effects on **Epstein-Barr** virus activation
 AUTHOR(S): Ohtsu, Hironori; Tanaka, Reiko; In, Yasuko; Matsunaga, Shunyo; Tokuda, Harukuni; Nishino, Hoyoku
 CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Osaka, Japan
 SOURCE: Planta Medica (2001), 67(1), 55-60
 CODEN: PLMEAA; ISSN: 0032-0943
 PUBLISHER: Georg Thieme Verlag
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Four known diterpenes I (R = H), II (R = H), I (R = OH), and III, and four new abietane diterpenes, 15-hydroxy-8 α ,14 α ,12 α ,13 α -

diepoxyabietan-18-oic acid (II, R = OH), 7 α ,8 α ,13 β ,14 β -a.-diepoxyabietan-18-oic acid (IV), 18-nor-abieta-8,11,13-triene-4 α ,7 α ,15-triol (V, R = OH), and abieta-8,11,13-triene-7 α ,15,18-triol (V, R = CH₂OH) were isolated from the CHCl₃ extract of the cones of *Larix kaempferi*. A known compound, 13,14-seco-13,14-dioxoabiet-13-en-18-oic acid (III) was isolated from natural sources for the first time. Their structures were determined by chemical and spectroscopic methods including 1D and 2D NMR techniques. The absolute stereostructure of IV was determined by x-ray crystallog. anal. The inhibitory effects of these compds. on Epstein-Barr virus early antigen (EBV-EA) activation induced by the tumor promoter, 12-O-tetradecanoyl-phorbol-13-acetate (TPA), were examined as a primary screening for antitumor promoters.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 28 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:103906 CAPLUS

DOCUMENT NUMBER: 135:282426

TITLE: Anti-tumor-promoting activities (cancer chemopreventive activities) of natural products

AUTHOR(S): Konoshima, Takao; Takasaki, Midori

CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607-8414, Japan

SOURCE: Studies in Natural Products Chemistry (2000), 24(Bioactive Natural Products (Part E)), 215-267
CODEN: SNPCE2

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review with 66 refs. To search for possible anti-tumor-promoters (cancer chemopreventive agents) from natural resource, more than one-hundred and fifty natural products (flavonoids, lignans, euglobals, **triterpenoids**, saponins and cardiac steroids etc.) were examined by primary screening test using in vitro synergistic assay on **Epstein-Barr** virus early antigen (EBA-EA) activation. Several compds. which exhibited the inhibitory effect on EBV-EA activation were further assayed by in vivo two-stage carcinogenesis test (mouse skin, pulmonary and liver carcinogenesis). Of many aromatic compds., afromosin, pendulone, amorphispironone, tephrosin, asarinin, xanthoxylol, euglobal-GI, and euglobal-III exhibited significant anti-tumor-promoting activities on mouse skin and pulmonary carcinogenesis. Further, many novel **triterpenoids** and their glycosides were isolated from Leguminous and Cucurbitaceous plants, and gleditsiasaponin C, gymicladussaponin G, 23, 24-dihydrocucurbitacin F, and cayaponoside B also exhibited strong inhibitory effects on two-stage carcinogenesis test. Of cardiac glycosides, digitoxin exhibited the most remarkable effects on mouse skin and pulmonary carcinogenesis. Furthermore, the combined effects of plural constituents and plant exts. on cancer chemoprevention were also examined, and the combination of afromosin with soyasaponin I enhanced the each anti-tumor-promoting activity. Consequently, many active compds. were found out and these compds. might be valuable chemopreventive agents.

REFERENCE COUNT: 66 THERE ARE 66 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 29 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:829869 CAPLUS

DOCUMENT NUMBER: 134:202415

TITLE: Cancer chemopreventive agents, labdane diterpenoids from the stem bark of *Thuja standishii* (Gord.) Carr

AUTHOR(S): Tanaka, R.; Ohtsu, H.; Iwamoto, M.; Minami, T.; Tokuda, H.; Nishino, H.; Matsunaga, S.; Yoshitake, A.

CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Takatsuki, Osaka, 569-1094, Japan

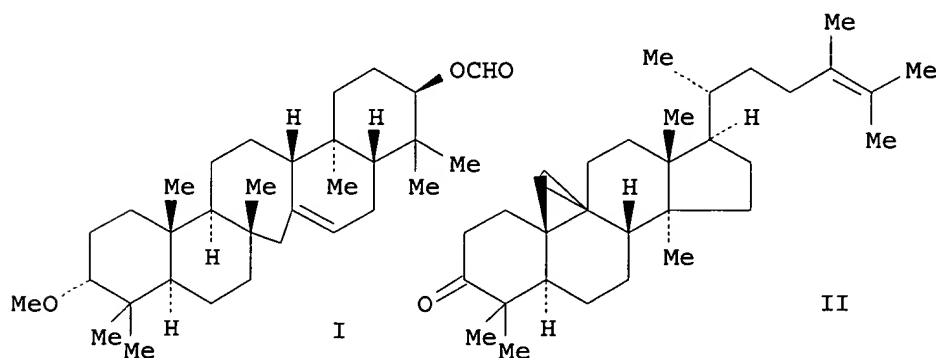
SOURCE: Cancer Letters (Shannon, Ireland) (2000), 161(2), 165-170
 CODEN: CALEDQ; ISSN: 0304-3835
 PUBLISHER: Elsevier Science Ireland Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Seven labdane-type **diterpenoids** from the stem bark of *Thuja standishii* (Gord.) Carr. (Cupressaceae) and their analogs showed strong inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA). Among these compds., 15,16-bisnor-13-oxolabda-8,11E-dien-19-oic acid was revealed to have the strongest inhibitory effect on the EBV-EA activation, being stronger than that of β -carotene which has been intensively studied in cancer prevention using animal models. 15,16-bisnor-13-Oxolabda-8,11E-dien-19-oic acid was also found to exhibit the excellent antitumor promoting activity in two-stage mouse skin carcinogenesis test using 7,12-dimethylbenz[a]anthracene and TPA.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 30 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:812001 CAPLUS
 DOCUMENT NUMBER: 134:83490
 TITLE: Bioactive triterpenoids from the stem bark of *Picea glehni*
 AUTHOR(S): Tanaka, Reiko; Kinouchi, Yoshitaka; Tokuda, Harukuni; Nishino, Hoyoku; Matsunaga, Shunyo
 CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Osaka, Japan
 SOURCE: Planta Medica (2000), 66(7), 630-634
 CODEN: PLMEAA; ISSN: 0032-0943
 PUBLISHER: Georg Thieme Verlag
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



AB Two new **triterpenoids**, 3 α -methoxyserrat-14-en-21 β -yl formate (I), and 24-methylcycloartenone (II), were isolated from the stem bark of *Picea glehni* (Fr. Schm.) Masters together with three known **triterpenoids**, 3 α -methoxyserrat-14-en-21 β -ol, 3 β -methoxyserrat-14-en-21 β -ol, and piceanonol A. I and II, and a synthetic sample, 3 α -methoxyserrat-13-en-21 β -yl formate showed potent inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate (TPA).

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 31 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:554956 CAPLUS

DOCUMENT NUMBER: 133:278700

TITLE: Ichthyotoxic phloroglucinol derivatives from
Dryopteris fragrans and their antitumor promoting
activity

AUTHOR(S): Ito, Hideyuki; Muranaka, Takashi; Mori, Kazuko; Jin,
Zhe-Xiong; Tokuda, Harukuni; Nishino, Hoyoku; Yoshida,
Takashi

CORPORATE SOURCE: Faculty of Pharmaceutical Sciences, Okayama
University, Okayama, 700-8530, Japan

SOURCE: Chemical & Pharmaceutical Bulletin (2000), 48(8),
1190-1195

CODEN: CPBTAL; ISSN: 0009-2363

PUBLISHER: Pharmaceutical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two new ichthyotoxic compds., aspidin PB and dryofragin, in addition to three
known phloroglucinol derivs. and five **terpenoids**, were isolated
from the whole herbs of Dryopteris fragrans by toxicity-directed
fractionation using Oryzias latipes (Japanese name; medaka). The
structures of the new compds. were determined by spectroscopic methods
including 2D NMR techniques. Of the isolates aspidin PB, dryofragin and
the phloroglucinols aspidin AB and BB and aspidinol, and the
sesquiterpenoids albicanol and albicanyl acetate exhibited potent
ichthyotoxic activity against medaka with a median tolerance limit (TL_m
after 24 h) of 1.2-4.3 µg/mL. These compds. which are toxic to fish
also had a potent inhibitory effect on the activation of **Epstein**
-Barr virus early-antigen (EBV-EA) induced by tetradecanoyl
phorbol 13-acetate, which is an in vitro short-term assay for antitumor
promoting agents. Aspidin BB and albicanol, which exhibited strong
inhibitory effects on the EBV-EA activation, significantly suppressed an
in vivo two-stage carcinogenesis on mouse skin.

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 32 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:514189 CAPLUS

DOCUMENT NUMBER: 133:235138

TITLE: Chemical Constituents of Clausena excavata: Isolation
and structure elucidation of novel furanone-coumarins
with inhibitory effects for tumor-promotion

AUTHOR(S): Ito, Chihiro; Itoigawa, Masataka; Katsuno, Shinya;
Omura, Mitsuo; Tokuda, Harukuni; Nishino, Hoyoku;
Furukawa, Hiroshi

CORPORATE SOURCE: Faculty of Pharmacy, Meijo University, Nagoya,
468-8503, Japan

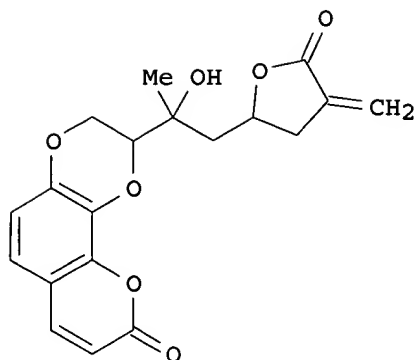
SOURCE: Journal of Natural Products (2000), 63(9), 1218-1224
CODEN: JNPRDF; ISSN: 0163-3864

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



I

AB A study of the chemical constituents of the leaves of *Clausena excavata* cultivated in a greenhouse led to the isolation and identification of 10 new furanone-coumarins named clauslactones A (e.g. I), B, C, D, E, F, G, H, I, and J, together with a known carbazole, clauszoline M, and a coumarin, umbelliferone. The new coumarins contain a C10 **terpenoid** side chain with a furanone (γ -lactone) moiety. Further, in clauslactones A-D, the **terpenoid** side chain was shown to be linked to the 7,8-dioxygenated coumarin skeleton through a 1,4-dioxane ring system. This is the first example of coumarins with these structural characteristics in nature. These furanone-coumarins were found to exhibit inhibitory activity against 12-O-tetradecanoylphorbol-13-acetate-induced **Epstein-Barr** virus early antigen activation in Raji cells.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 33 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:488735 CAPLUS

DOCUMENT NUMBER: 133:246796

TITLE: Anti-tumor promoting effects of sesquiterpenes from *Maytenus cuzcoina* (Celastraceae)

AUTHOR(S): Gonzalez, A. G.; Tincusi, B. M.; Bazzocchi, I. L.; Tokuda, H.; Nishino, H.; Konoshima, T.; Jimenez, I. A.; Ravelo, A. G.

CORPORATE SOURCE: Instituto Universitario de Bio-Organica "Antonio Gonzalez", Universidad de La Laguna, Tenerife, Canary Islands, 38206, Spain

SOURCE: Bioorganic & Medicinal Chemistry (2000), 8(7), 1773-1778

CODEN: BMECEP; ISSN: 0968-0896

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Ten **sesquiterpenoids**, with a dihydro- β -agarofuran skeleton, were isolated from *Maytenus cuzcoina* (Celastraceae). Their structures were elucidated on the basis of spectral anal., including homo- and heteronuclear correlations NMR expts. (COSY, ROESY, HMQC and HMBC), and chemical correlations. The compds. have been tested for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA), as a test for potential cancer chemopreventive agents. Some of compds. showed strong inhibitory effects on EBV-EA induction (100% inhibition at 1000 mol ratio/TPA). Their structure-activity relationship is discussed.

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 34 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

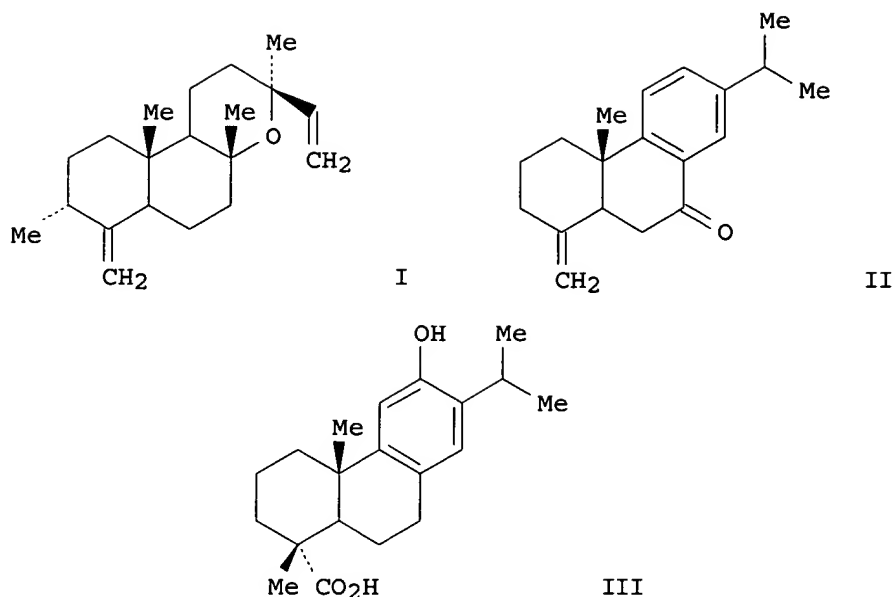
ACCESSION NUMBER: 2000:431044 CAPLUS

DOCUMENT NUMBER: 133:83607
TITLE: Antitumor-promoting activities of sterols and triterpenoids
AUTHOR(S): Yasumawa, Ken; Akihisa, Toshihiro
CORPORATE SOURCE: Department of Pharmacy, College of Pharmacy, Nihon University, Narashinodai, Funabashi-shi, Chiba-ken, 274-8555, Japan
SOURCE: Nihon Yukagakkaishi (2000), 49(6), 571-582
CODEN: NIYUFC; ISSN: 1341-8327
PUBLISHER: Nihon Yukagaku Gakkai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A review with 88 refs. The eradication of cancer is one of the important research subjects for mankind toward the 21st century. In the course of our research on potent cancer chemopreventive agents from edible plants and fungi, and from crude herbal medicines, we have found that various sterols and triterpene alcs. and their oxygenated derivs. showed activity in in vivo primary screening assay of antitumor promoters by inhibiting the inflammatory ear edema induced by 12-O-tetradecanoylphorbol-13-acetate (TPA) in mice. In this review, we discussed the inhibitory activity of sterols and **triterpenoids** toward TPA-induced inflammatory ear edema, and tumor promotion during two-stage carcinogenesis with 7,12-dimethylbenz[a]anthracene (DMBA) and TPA. This activity was also noted in several other assays on antitumor promoters such as that on the activation of **Epstein-Barr** virus by TPA, and TPA-stimulated Pi incorporation in HeLa cells. Sterols and **triterpenoids** are minor but ubiquitous components in the human diet, and are considered to be non-toxic. These compds. may possibly prove useful for producing cancer chemopreventive agents.

L2 ANSWER 35 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:321849 CAPLUS
DOCUMENT NUMBER: 133:86705
TITLE: Potential antitumor-promoting diterpenoids from the stem bark of Picea glehni
AUTHOR(S): Kinouchi, Yoshitaka; Matsunaga, Shunyo; Tokuda, Harukuni; Nishino, Hoyoku; Tanaka, Reiko
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Osaka, 569-1094, Japan
SOURCE: Journal of Natural Products (2000), 63(6), 817-820
CODEN: JNPRDF; ISSN: 0163-3864
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



AB A novel rearranged labdane-type **diterpenoid**, 19(4→3)abeo-8α,13(S)-epoxylabda-4(18),14-diene (I), and two new abietane-type **diterpenoids**, 19-nor-abieta-4(18),8,11,13-tetraen-7-one (II) and 12-hydroxydehydroabietic acid (III) were isolated from the stem bark of *Picea glehni*, together with seven known **diterpenoids**-13-epimanoyl oxide, dehydroabietic acid (IV), (11E)-14,15-bisnor-8α-hydroxy-11-labden-13-one (V), abieta-8,11,13-trien-7-one (VI), 9α,13α-epidioxyabiet-8(14)-en-18-oic acid (VII), 9,10α-epoxy-9,10-seco-abieta-8,11,13-trien-18-oic acid, and Me 15-hydroxy-7-oxo-dehydroabietate (VIII). Compds. IV-VIII showed potent inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol 13-acetate.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 36 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:799978 CAPLUS

DOCUMENT NUMBER: 132:134799

TITLE: Bioactive Steroids from the Whole Herb of *Euphorbia chamaesyce*

AUTHOR(S): Tanaka, Reiko; Kasubuchi, Kazuaki; Kita, Shunji; Tokuda, Harukuni; Nishino, Hoyoku; Matsunaga, Shunyo

CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Takatsuki Osaka, 569-1094, Japan

SOURCE: Journal of Natural Products (2000), 63(1), 99-103
CODEN: JNPRDF; ISSN: 0163-3864

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

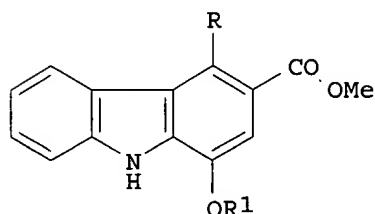
LANGUAGE: English

AB Three new ergostane-type steroids, 3β-hydroxy-4α,14α-dimethyl-5α-ergosta-8,24(28)-dien-11-one, 3β,11α-dihydroxy-4α,14α-dimethyl-5α-ergosta-8,24(28)-dien-7-one, and 3β,7α-dihydroxy-4α,14α-dimethyl-5α-ergosta-8,24(28)-dien-11-one, were isolated, together with two known **triterpenoids**, wrightial and lup-20(30)-ene-3β,29-diol from the whole herb of *Euphorbia chamaesyce*. The third steroid Compound showed a potent inhibitory effect on **Epstein-Barr** virus early antigen activation induced by the tumor promoter 12-O-tetradecanoylphorbol

13-acetate (TPA).

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 37 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:770622 CAPLUS
DOCUMENT NUMBER: 132:119889
TITLE: New Carbazole Alkaloids from *Clausena anisata* with Antitumor Promoting Activity
AUTHOR(S): Ito, Chihiro; Katsuno, Shinya; Itoigawa, Masataka; Ruangrunsi, Nijsiri; Mukainaka, Teruo; Okuda, Masato; Kitagawa, Yutaka; Tokuda, Harukuni; Nishino, Hoyoku; Furukawa, Hiroshi
CORPORATE SOURCE: Faculty of Pharmacy, Meijo University, Tempaku Nagoya, 468-8503, Japan
SOURCE: Journal of Natural Products (2000), 63(1), 125-128
CODEN: JNPRDF; ISSN: 0163-3864
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB Four new carbazole alkaloids, clausamines D, E, F, and G I [R = Me2C:CHCH2, R1 = Me; R = (E)-Me2C(OH)CH:CH, R1 = Me; R = (E)-Me2C(OH)CH:CH, R1 = H; R = (E)-Me2C(OOH)CH:CH, R1 = Me, resp.], were isolated from *Clausena anisata* as inhibitors of Epstein-Barr virus early antigen activation induced by 12-O-tetradecanoylphorbol-13-acetate in Raji cells.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 38 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:399063 CAPLUS
DOCUMENT NUMBER: 131:153533
TITLE: Anti-carcinogenic activity of *Taraxacum* plant. II
AUTHOR(S): Takasaki, Midori; Konoshima, Takao; Tokuda, Harukuni; Masuda, Kazuo; Arai, Yoko; Shiojima, Kenji; Ageta, Hiroyuki
CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607-8414, Japan
SOURCE: Biological & Pharmaceutical Bulletin (1999), 22(6), 606-610
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Eleven triterpenoids (I-XI) from the roots of *Taraxacum japonicum* (Compositae) were examined for their inhibitory effects on Epstein-Barr virus early antigen (EBV-EA) induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA), in Raji cells as a primary screening test for anti-tumor-promoters (cancer chemopreventive agents). Of these triterpenoids, taraxasterol I

and taraxerol VII exhibited significant inhibitory effects on EBV-EA induction, but the inhibitory effects of their acetates II and VIII were weaker than those of I and VII. Furthermore, I and VII exhibited potent anti-tumor-promoting activity in the two-stage carcinogenesis tests of mouse skin using 7,12-dimethylbenz[a]anthracene (DMBA) as an initiator and TPA as a promoter, and I showed a remarkable inhibitory effect on mouse spontaneous mammary tumors using C3H/OuJ mouse. These results strongly suggested that taraxasterol could be a valuable chemopreventive agent.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 39 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:423692 CAPLUS

DOCUMENT NUMBER: 127:173813

TITLE: Triterpenoid inhibitors of interleukin-1 secretion and tumor-promotion from *Tripterygium wilfordii* var. *regelii*

AUTHOR(S): Takaishi, Yoshihisa; Wariishi, Noriko; Tateishi, Hideo; Kawazoe, Kazuyoshi; Nakano, Kimiko; Ono, Yukihiisa; Tokuda, Haruyuki; Nishino, Hoyoku; Iwashima, Akio

CORPORATE SOURCE: Faculty of Pharmaceutical Sciences, University of Tokushima, Tokushima, 770, Japan

SOURCE: Phytochemistry (1997), 45(5), 969-974

CODEN: PYTCAS; ISSN: 0031-9422

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Three new **triterpenoids**, 2,3,22 β -trihydroxy-21-oxo-24,29-nor-D:A-friedooleana-1,3,5(10)-triene, 2 α ,6 β -dihydroxy-3-oxo-24-nor-D:A-friedooleana-4-ene-29-oic acid and 2,3,7-trihydroxy-6-oxo-24-nor-D:A-friedooleana-1,3,5(10),7-tetraene-29-oic acid, named rheol A, B and C, and nine known **triterpenoids** were isolated from *T. wilfordii* var. *regelii*. Their structures were established on the basis of the chemical reactions and spectroscopic evidence. Isolated compds. and derivs. were observed to inhibit **Epstein-Barr** virus early antigen activation and showed potent inhibitory activities against interleukin-1 α and β release from human peripheral mononuclear cells.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

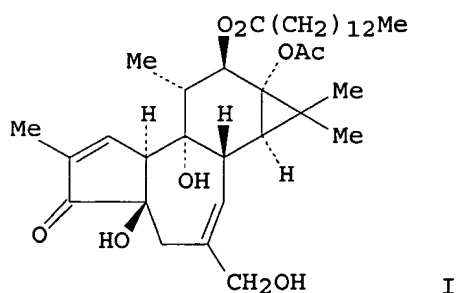
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(FILE 'HOME' ENTERED AT 14:47:18 ON 19 APR 2006)

FILE 'CAPLUS, MEDLINE' ENTERED AT 14:47:27 ON 19 APR 2006

L1 24 S GLYCYRR? (P) EPSTEIN BARR
L2 100 S ?TERPENOID? (P) EPSTEIN BARR

L4 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1983:401608 CAPLUS
 DOCUMENT NUMBER: 99:1608
 TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in **Epstein-Barr** virus early antigen in Raji cells
 AUTHOR(S): Okamoto, Hitoshi; Yoshida, Daisuke; Mizusaki, Shigenobu
 CORPORATE SOURCE: Cent. Res. Inst., Japan Tob. and Salt Public Corp., Yokohama, 227, Japan
 SOURCE: Cancer Letters (Shannon, Ireland) (1983), 19(1), 47-53
 CODEN: CALEDQ; ISSN: 0304-3835
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



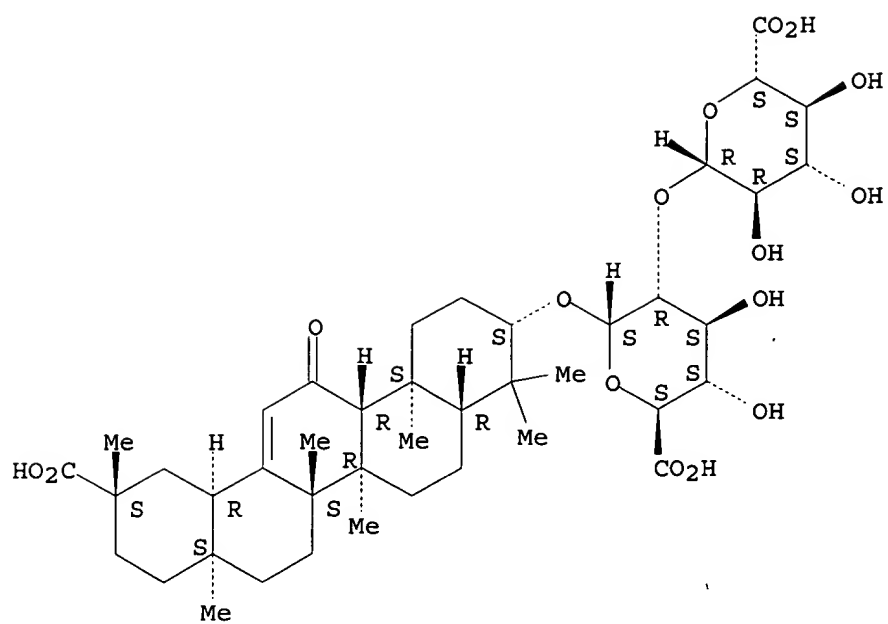
AB Retinol [68-26-8], 5 flavonoids, 3 steroids, and 7 sweetening agents were studied for their effects on TPA (I) [16561-29-8]-induced early antigen (EA) of **Epstein-Barr** virus (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol inhibited EA induction. Among flavonoids, quercetin [117-39-5] resulted in effective inhibition of EA induction by TPA and α -naphthoflavone [604-59-1] showed a weakly inhibitory effect. None of the other flavonoids such as rutin [153-18-4], catechin [154-23-4] and β -naphthoflavone [6051-87-2] affected the induction of EBV-EA by TPA. β -Estradiol [50-28-2] obviously inhibited EBV-EA induction by TPA, but hydrocortisone [50-23-7] did not show any inhibitory effect. Glycyrrhetic acid, steviol, phyllostulcin and perrillartine also strongly inhibited EBV-EA induction. Glycyrrhizin [1405-86-3] and stevioside [57817-89-7], glycosides of glycyrrhetic acid [471-53-4] and steviol [471-80-7], did not inhibit the induction of EBV-EA by TPA. Some of these inhibitors may be effective in inhibiting the in vivo tumor promotion by TPA.

IT **1405-86-3**
 RL: BIOL (Biological study)
 (TPA-induced **Epstein-Barr** virus early antigen in Raji cells response to)

RN 1405-86-3 CAPLUS

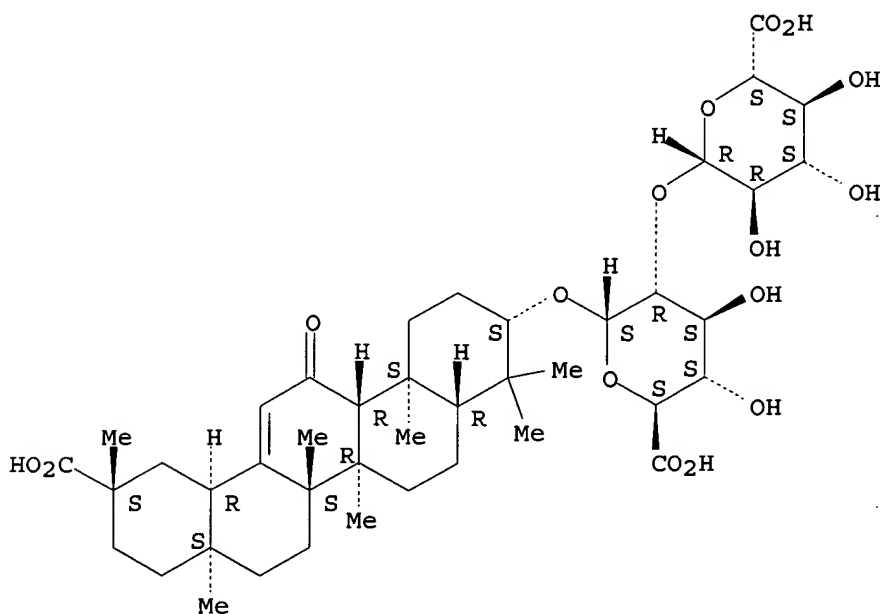
CN α -D-Glucopyranosiduronic acid, (3 β ,20 β)-20-carboxy-11-oxo-30-norolean-12-en-3-yl 2-O- β -D-glucopyranuronosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2003:499243 CAPLUS
 DOCUMENT NUMBER: 139:374307
 TITLE: Mechanism of action of glycyrrhizic acid in inhibition
 of **Epstein-Barr** virus replication
 in vitro
 AUTHOR(S): Lin, Jung-Chung
 CORPORATE SOURCE: College of Medicine, Department of Microbiology, Tzu
 Chi University, Hualien, 970, Taiwan
 SOURCE: Antiviral Research (2003), 59(1), 41-47
 CODEN: ARSRDR; ISSN: 0166-3542
 PUBLISHER: Elsevier Science B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB The authors report here that glycyrrhizic acid (GL), a component of
 licorice root (*Glycyrrhiza radix*), is active against EBV replication in
 superinfected Raji cells in a dose-dependent fashion. The IC50 values for
 viral inhibition and cell growth were 0.04 and 4.8 mM, resp. The
 selectivity index (ratio of IC50 for cell growth to IC50 for viral DNA
 synthesis) was 120. Time of addition expts. suggested that GL interferes
 with an early step of the EBV replication cycle (possibly penetration).
 GL had no effect on viral adsorption nor did it inactivate EBV particles.
 Thus, GL represents a new class of anti-EBV compds. with a mode of action
 different from that of the nucleoside analogs that inhibit viral DNA
 polymerase.
 IT 1405-86-3, Glycyrrhizic acid
 RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU
 (Therapeutic use); BIOL (Biological study); USES (Uses)
 (mechanism of glycyrrhizic acid in inhibition of **Epstein-**
Barr virus replication in vitro)
 RN 1405-86-3 CAPLUS
 CN α -D-Glucopyranosiduronic acid, (3 β ,20 β)-20-carboxy-11-oxo-
 30-norolean-12-en-3-yl 2-O- β -D-glucopyranuronosyl- (9CI) (CA INDEX
 NAME)

Absolute stereochemistry.



REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:763541 CAPLUS

DOCUMENT NUMBER: 130:172862

TITLE: Epstein-Barr virus DNA polymerase inhibitors from Chinese herbs: use of preliminary screening, physicochemical properties and taxonomy for new lead compounds generation

AUTHOR(S): Lien, Eric J.; Bui, Huynh-Hoa; Ren, Shijun; Liu, Karin C. S. Chen; Lin, Mei-Tsu; Chiou, Juo-Farn

CORPORATE SOURCE: Department of Pharmaceutical Sciences, School of Pharmacy, University of Southern California, Los Angeles, CA, 90033, USA

SOURCE: Chinese Pharmaceutical Journal (Taipei) (1998), 50(4), 233-247

CODEN: CPHJEP; ISSN: 1016-1015

PUBLISHER: Pharmaceutical Society of Republic of China

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A paradigm of combining preliminary screening data, SAR, functional group and taxonomical analyses has been proposed for new lead compds. generation. Based on the screening data of 38 natural products, a quaternary ammonium derivative (coptisine chloride), a sesquiterpene with an α,β -unsatd. lactone function and an isoflavonoid (daidzein) have been found to be most active. Based on the analyses of overall structures, physicochem. properties and taxonomical relationships, 47 related compds. and six families of plants are suggested for further investigation. Due to the inherent biodiversity, nature may still be the best source for new drug discovery.

IT 1405-86-3, Glycyrrhizic acid

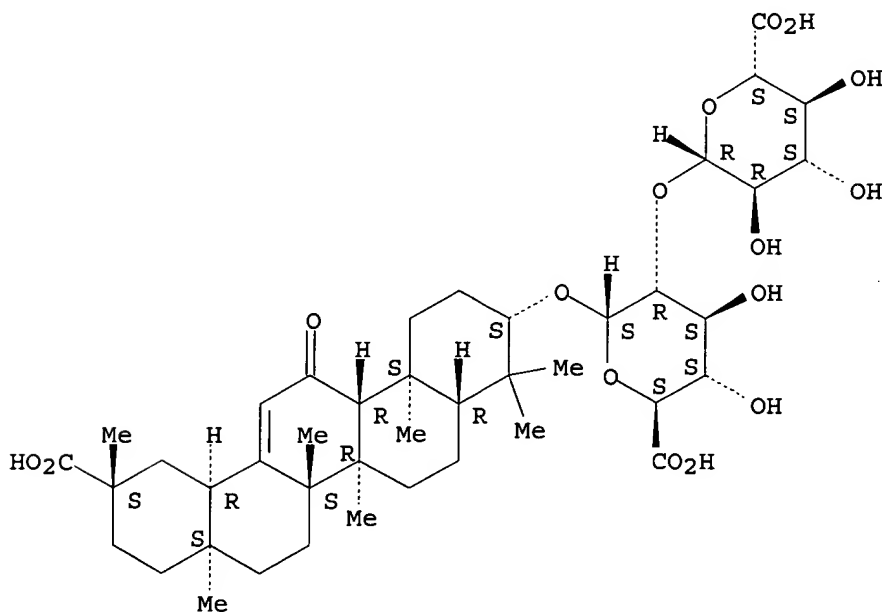
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)

(Epstein-Barr virus DNA polymerase inhibitors from Chinese herbs)

RN 1405-86-3 CAPLUS

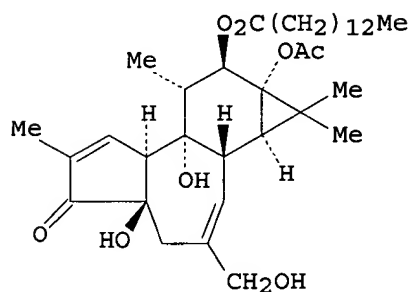
CN α -D-Glucopyranosiduronic acid, (3 β ,20 β)-20-carboxy-11-oxo-30-norolean-12-en-3-yl 2-O- β -D-glucopyranuronosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:401608 CAPLUS
DOCUMENT NUMBER: 99:1608
TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in **Epstein-Barr** virus early antigen in Raji cells
AUTHOR(S): Okamoto, Hitoshi; Yoshida, Daisuke; Mizusaki, Shigenobu
CORPORATE SOURCE: Cent. Res. Inst., Japan Tob. and Salt Public Corp., Yokohama, 227, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (1983), 19(1), 47-53
CODEN: CALEDQ; ISSN: 0304-3835
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



AB Retinol [68-26-8], 5 flavonoids, 3 steroids, and 7 sweetening agents were studied for their effects on TPA (I) [16561-29-8]-induced early antigen (EA) of **Epstein-Barr** virus (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol inhibited EA induction. Among flavonoids, quercetin [117-39-5] resulted in effective inhibition of EA induction by TPA and α -naphthoflavone [604-59-1] showed a weakly inhibitory effect. None of the other flavonoids such as rutin [153-18-4], catechin [154-23-4] and β -naphthoflavone [6051-87-2] affected the induction of EBV-EA by TPA. β -Estradiol [50-28-2] obviously inhibited EBV-EA induction by TPA, but hydrocortisone [50-23-7] did not show any inhibitory effect. Glycyrrhetic acid, steviol, phyllostulcin and perrillartine also strongly inhibited EBV-EA induction. Glycyrrhizin [1405-86-3] and stevioside [57817-89-7], glycosides of glycyrrhetic acid [471-53-4] and steviol [471-80-7], did not inhibit the induction of EBV-EA by TPA. Some of these inhibitors may be effective in inhibiting the in vivo tumor promotion by TPA.

IT 1405-86-3

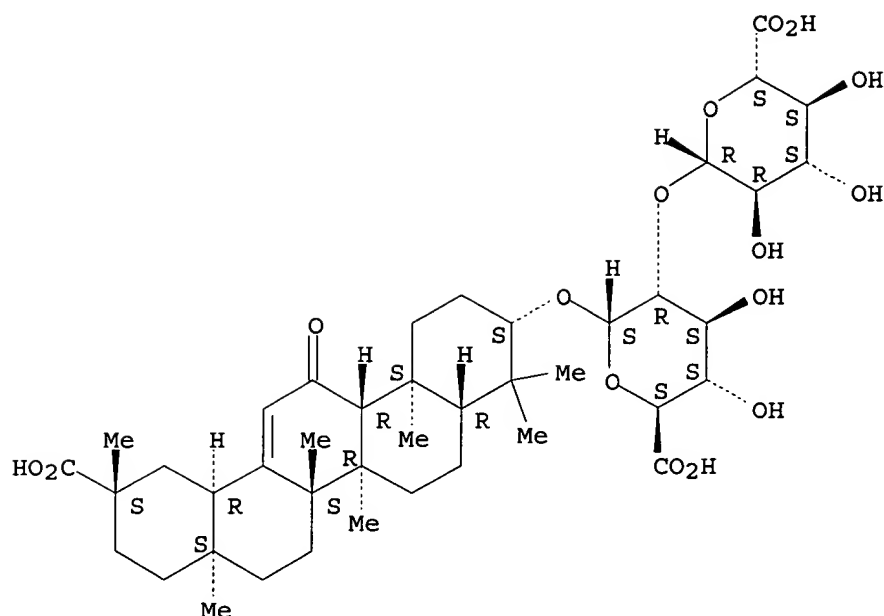
RL: BIOL (Biological study)

(TPA-induced **Epstein-Barr** virus early antigen in Raji cells response to)

RN 1405-86-3 CAPLUS

CN α -D-Glucopyranosiduronic acid, (3 β ,20 β)-20-carboxy-11-oxo-30-norolean-12-en-3-yl 2-O- β -D-glucopyranuronosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 4 OF 6 MEDLINE on STN
 ACCESSION NUMBER: 2005132955 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 15765143
 TITLE: Licking latency with licorice.
 AUTHOR: Cohen Jeffrey I
 CORPORATE SOURCE: Medical Virology Section, Laboratory of Clinical Infectious Diseases, NIH, Bethesda, Maryland 20892, USA..
 jcohen@niaid.nih.gov
 SOURCE: The Journal of clinical investigation, (2005 Mar) Vol. 115, No. 3, pp. 591-3.
 Journal code: 7802877. ISSN: 0021-9738.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Commentary
 Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
 ENTRY MONTH: 200505
 ENTRY DATE: Entered STN: 20050315
 Last Updated on STN: 20050510
 Entered Medline: 20050509

AB Numerous viruses cause latent infections in humans, and reactivation often results in pain and suffering. While vaccines for several of these viruses are available or currently being studied in clinical trials, and antiviral therapies have been successful in preventing or treating active infection, therapy to eradicate latent infection has lagged behind. A new study reported in this issue of the JCI shows that treatment of cells latently infected with Kaposi sarcoma-associated herpesvirus (KSHV) with glycyrrhizic acid, a component of licorice, reduces synthesis of a viral latency protein and induces apoptosis of infected cells. This finding suggests a novel way to interrupt latency.

L4 ANSWER 5 OF 6 MEDLINE on STN
 ACCESSION NUMBER: 2003306618 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 12834859
 TITLE: Mechanism of action of glycyrrhizic acid in inhibition of Epstein-Barr virus replication in vitro.
 AUTHOR: Lin Jung Chung
 CORPORATE SOURCE: Department of Microbiology, College of Medicine, Tzu Chi University, 701 Section 3, Chung Yang Road, Hualien 970,

SOURCE: Taiwan ROC.. jx18@mail.tcu.edu.tw
 Antiviral research, (2003 Jun) Vol. 59, No. 1, pp. 41-7.
 Journal code: 8109699. ISSN: 0166-3542.

PUB. COUNTRY: Netherlands
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200310
 ENTRY DATE: Entered STN: 20030702
 Last Updated on STN: 20031024
 Entered Medline: 20031023

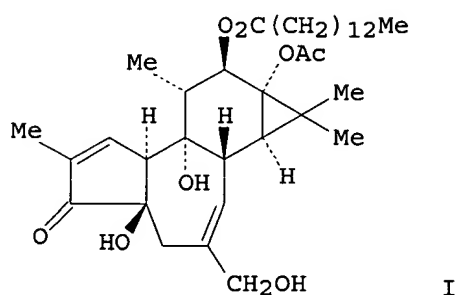
AB We report here that glycyrrhizic acid (GL), a component of licorice root (Glycyrrhiza radix), is active against EBV replication in superinfected Raji cells in a dose-dependent fashion. The IC(50) values for viral inhibition and cell growth were 0.04 and 4.8mM, respectively. The selectivity index (ratio of IC(50) for cell growth to IC(50) for viral DNA synthesis) was 120. Time of addition experiments suggested that GL interferes with an early step of EBV replication cycle (possibly penetration). GL had no effect on viral adsorption, nor did it inactivate EBV particles. Thus, GL represents a new class of anti-EBV compounds with a mode of action different from that of the nucleoside analogs that inhibit viral DNA polymerase.

L4 ANSWER 6 OF 6 MEDLINE on STN
 ACCESSION NUMBER: 96186542 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 8606838
 TITLE: The reversal of **Epstein Barr** virus induced hepatosplenomegaly in 24 hours with inhibitors of xanthine oxidase and nitric oxide synthase.

AUTHOR: Flavien-Koenig D F
 SOURCE: The New Zealand medical journal, (1996 Mar 22) Vol. 109, No. 1018, pp. 106-7.
 Journal code: 0401067. ISSN: 0028-8446.

PUB. COUNTRY: New Zealand
 DOCUMENT TYPE: (CASE REPORTS)
 Letter
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199605
 ENTRY DATE: Entered STN: 19960531
 Last Updated on STN: 19980206
 Entered Medline: 19960517

L6 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1983:401608 CAPLUS
 DOCUMENT NUMBER: 99:1608
 TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in **Epstein-Barr** virus early antigen in Raji cells
 AUTHOR(S): Okamoto, Hitoshi; Yoshida, Daisuke; Mizusaki, Shigenobu
 CORPORATE SOURCE: Cent. Res. Inst., Japan Tob. and Salt Public Corp., Yokohama, 227, Japan
 SOURCE: Cancer Letters (Shannon, Ireland) (1983), 19(1), 47-53
 CODEN: CALEDQ; ISSN: 0304-3835
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



AB Retinol [68-26-8], 5 flavonoids, 3 steroids, and 7 sweetening agents were studied for their effects on TPA (I) [16561-29-8]-induced early antigen (EA) of **Epstein-Barr** virus (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol inhibited EA induction. Among flavonoids, quercetin [117-39-5] resulted in effective inhibition of EA induction by TPA and α -naphthoflavone [604-59-1] showed a weakly inhibitory effect. None of the other flavonoids such as rutin [153-18-4], catechin [154-23-4] and β -naphthoflavone [6051-87-2] affected the induction of EBV-EA by TPA. β -Estradiol [50-28-2] obviously inhibited EBV-EA induction by TPA, but hydrocortisone [50-23-7] did not show any inhibitory effect. Glycyrrhetic acid, steviol, phyllostulcin and perrillartine also strongly inhibited EBV-EA induction. Glycyrrhizin [1405-86-3] and stevioside [57817-89-7], glycosides of glycyrrhetic acid [471-53-4] and steviol [471-80-7], did not inhibit the induction of EBV-EA by TPA. Some of these inhibitors may be effective in inhibiting the in vivo tumor promotion by TPA.

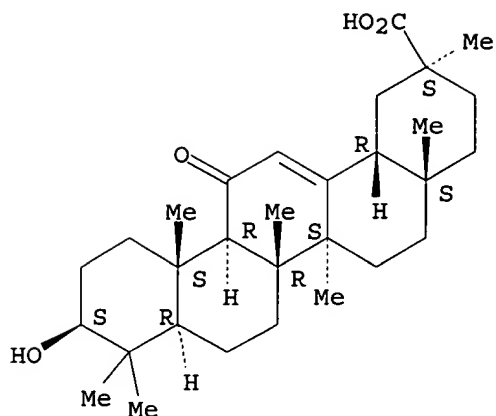
IT 471-53-4

RL: BIOL (Biological study)
 (TPA-induced **Epstein-Barr** virus early antigen in Raji cells response to)

RN 471-53-4 CAPLUS

CN Olean-12-en-29-oic acid, 3-hydroxy-11-oxo-, (3 β ,20 β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L6 ANSWER 2 OF 3 MEDLINE on STN
 ACCESSION NUMBER: 2003128681 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 12608850
 TITLE: Polyprenylated benzophenones from *Garcinia assigu* and their potential cancer chemopreventive activities.
 AUTHOR: Ito Chihiro; Itoigawa Masataka; Miyamoto Yoshiaki; Onoda Saori; Rao K Sundar; Mukainaka Teruo; Tokuda Harukuni; Nishino Hoyoku; Furukawa Hiroshi
 CORPORATE SOURCE: Faculty of Pharmacy, Meijo University, Tempaku, Nagoya 468-8503, Japan.. itoigawa@tokaigakuen-u.ac.jp
 CONTRACT NUMBER: CA 17625 (NCI)
 SOURCE: Journal of natural products, (2003 Feb) Vol. 66, No. 2, pp. 206-9.
 Journal code: 7906882. ISSN: 0163-3864.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200307
 ENTRY DATE: Entered STN: 20030320
 Last Updated on STN: 20030708
 Entered Medline: 20030707

AB In a further study on the chemical constituents of *Garcinia assigu*, two new benzophenones corresponding to the 13-O-methyl ethers (1 and 2) of the known isogarcinol and garcinol, respectively, were isolated and characterized, along with known benzophenones (3-6). Inhibitory effects of the benzophenones isolated from this plant on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells and their radical-scavenging ability against 1,1-diphenyl-2-picrylhydrazyl (DPPH) were demonstrated. The cyclized polyprenylbenzophenones (1-5) showed comparable or stronger potential cancer chemopreventive activity when compared to glycyrrhetic acid, a known anti-tumor promoter.

L6 ANSWER 3 OF 3 MEDLINE on STN
 ACCESSION NUMBER: 96186542 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 8606838
 TITLE: The reversal of **Epstein Barr** virus induced hepatosplenomegaly in 24 hours with inhibitors of xanthine oxidase and nitric oxide synthase.
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 PUB. COUNTRY: New Zealand
 DOCUMENT TYPE: (CASE REPORTS)

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|---------------|-------------------------------|
| LANGUAGE: | Letter |
| FILE SEGMENT: | English |
| ENTRY MONTH: | Priority Journals |
| ENTRY DATE: | 199605 |
| | Entered STN: 19960531 |
| | Last Updated on STN: 19980206 |
| | Entered Medline: 19960517 |

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(FILE 'HOME' ENTERED AT 16:56:03 ON 19 APR 2006)

FILE 'CAPLUS, MEDLINE' ENTERED AT 16:56:14 ON 19 APR 2006

FILE 'REGISTRY' ENTERED AT 16:56:31 ON 19 APR 2006

E GLICYRRHIZIC/CN

E GLICYRRHIZIC ACID/CN

L1 1 S E3

E GLICYRRHETINIC ACID/CN

L2 1 S E3

FILE 'CAPLUS, MEDLINE' ENTERED AT 17:02:32 ON 19 APR 2006

L3 3188 S L1

L4 6 S L3 AND EPSTEIN BARR

L5 2506 S L2

L6 3 S L5 AND EPSTEIN BARR

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(FILE 'HOME' ENTERED AT 16:56:03 ON 19 APR 2006)

FILE 'CAPLUS, MEDLINE' ENTERED AT 16:56:14 ON 19 APR 2006

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L3 3188 S L1

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